For Customer in China
根据中华人民共和国信息产业部第39号令《电子信息产品污染控制管理办法》及标准中要求的“有毒有害物质或元素名称及含量”等信息，本产品相关信息请参考以下链接:
http://pro.sony.com.cn

出版日期：2011年9月

Printed on recycled paper.

http://www.sony.net/

Printed in Japan

SONY

4-273-971-**13** (1)

4273971130

Solid-State Memory Camcorder

PMW-F3K
PMW-F3L

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

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WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

IMPORTANT
The nameplate is located on the bottom.

WARNING
Excessive sound pressure from earphones and headphones can cause hearing loss. In order to use this product safely, avoid prolonged listening at excessive sound pressure levels.

For the customers in the U.S.A.
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For the customers in Canada
This Class A digital apparatus complies with Canadian ICES-003.

For the customers in Europe

This product with the CE marking complies with the EMC Directive issued by the Commission of the European Community. Compliance with this directive implies conformity to the following European standards:

- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environments: E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors), E4 (controlled EMC environment, ex. TV studio).

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.
The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany. For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

For the State of California, USA only

Perchlorate Material - special handling may apply, See www.dtsc.ca.gov/hazardouswaste/perchlorate
Perchlorate Material: Lithium battery contains perchlorate.

For the customers in Taiwan only

廢電池請回收

For the Customers in Brazil only

DESCARTE DE PILHAS E BATERIAS

Após o uso, as pilhas e/ou baterias poderão ser entregues ao estabelecimento comercial ou rede de assistência técnica autorizada.

Pilhas e Baterias Não Recarregáveis
Atenção:

Verifique as instruções de uso do aparelho certificando-se de que as polaridades (+) e (-) estão no sentido indicado. As pilhas poderão vazar ou explodir se as polaridades forem invertidas, expostas ao fogo, desmontadas ou recarregadas.

Evite misturar com pilhas de outro tipo ou com pilhas usadas, transportá-las ou armazená-las soltas, pois aumenta o risco de vazamento.

Retire as pilhas caso o aparelho não esteja sendo utilizado, para evitar possíveis danos na eventualidade de ocorrer vazamento.

As pilhas devem ser armazenadas em local seco e ventilado.

No caso de vazamento da pilha, evite o contato com a mesma. Lave qualquer parte do corpo afetado com água abundante. Ocorrendo irritação, procure auxílio médico.

Não remova o invólucro da pilha.

Mantenha fora do alcance das crianças. Em caso de ingestão procure auxílio médico imediatamente.

AVERTISSEMENT

Afin de réduire les risques d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.
Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

IMPORTANT

La plaque signalétique se situe sous l'appareil.

AVERTISSEMENT

Une pression acoustique excessive en provenance des écouteurs ou du casque peut provoquer une baisse de l'acuité auditive.
Pour utiliser ce produit en toute sécurité, évitez l'écoute prolongée à des pressions sonores excessives.

Pour les clients au Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Pour les clients en Europe

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) émise par la Commission de la Communauté européenne.
La conformité à cette directive implique la conformité aux normes européennes suivantes :

- EN55103-1 : Interférences électromagnétiques (émission)
- EN55103-2 : Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants : E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé, ex. studio de télévision).

Le fabricant de ce produit est Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japon.
Le représentant autorisé pour EMC et la sécurité des produits est Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Allemagne. Pour toute question concernant le service ou la garantie, veuillez consulter les adresses indiquées dans les documents de service ou de garantie séparés.

WARNUNG

Um die Gefahr von Bränden oder elektrischen Schlägen zu verringern, darf dieses Gerät nicht Regen oder Feuchtigkeit ausgesetzt werden.
Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

WICHTIG

Das Namensschild befindet sich auf der Unterseite des Gerätes.

WARNUNG

Zu hoher Schalldruck von Ohrhörern und Kopfhörern kann Gehörschäden verursachen.
Um dieses Produkt sicher zu verwenden, vermeiden Sie längeres Hören bei sehr hohen Schalldruckpegeln.

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie der EG-Kommission.
Angewandte Normen:

- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)

Für die folgenden elektromagnetischen Umgebungen: E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtbereich im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.
Der autorisierte Repräsentant für EMV und Produktsicherheit ist Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland. Bei jeglichen Angelegenheiten in Bezug auf Kundendienst oder Garantie wenden Sie sich bitte an die in den separaten Kundendienst- oder Garantiedokumenten aufgeführten Anschriften.

Für Kunden in Deutschland

Entsorgungshinweis: Bitte werfen Sie nur entladene Batterien in die Sammelboxen beim Handel oder den Kommunen. Entladen sind Batterien in der Regel dann, wenn das Gerät abschaltet und signalisiert „Batterie leer“ oder nach längerer Gebrauchsdauer der Batterien „nicht mehr einwandfrei funktioniert“. Um sicherzugehen, kleben Sie die Batteriepole z.B. mit einem Klebestreifen ab oder geben Sie die Batterien einzeln in einen Plastikbeutel.

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Overview
Features

The PMW-F3K/F3L is a highly compact and high-performance digital cinema camcorder that uses SxS[1)] memory cards as its recording medium. It employs a Super-35mm-equivalent single-plate CMOS sensor as the imaging device. With the exclusive PL mount adapter, various PL-mount lenses can be used.
The Dual-Link connectors enable Dual-Link output of 1080/50P or 1080/59.94P signals.

Multiple-format recording

The PMW-F3K/F3L camcorder offers a wide array of recording formats for multiple content creation applications. In addition to HD video of 1080 or 720 effective scan lines, the camcorder can also record and play back in DVCAM-compatible mode.
Switching between Progressive and Interlace and between NTSC and PAL are also possible, permitting you to use various formats for your needs.
SxS memory cards can simultaneously hold multiple files of any of these recording formats, allowing for flexible use of the memory cards.

HD Recording System

Nonlinear recording media

Using SxS memory cards, the PMW-F3K/F3L offers nonlinear capabilities such as instant random access and file-based operation.

HD recording using the "MPEG-2 Long GOP" codec

The PMW-F3K/F3L records 1920 × 1080 HD images using "MPEG-2 Long GOP" codec compression. This mature "MPEG-2 Long GOP" codec, which is also adopted in the XDCAM[1)] HD and HDV[2)] 1080i series of products, enables you to record stunning-quality HD video and audio with long recording time by efficiently compressing the data.

Selectable bit rates

The PMW-F3K/F3L offers a choice of bit rates: either 35 Mbps (HQ mode) or 25 Mbps (SP mode), depending on the desired picture quality and recording time.

Dual-Link output function

Signals of 1080/50P or 1080/59.94P fed from the HD SDI A/B (Dual-Link) connectors can be recorded on an external device.

Long recording time

By utilizing an efficient compression format, the PMW-F3K/F3L records high-quality HD images for long recording time of approx. 200 minutes in HQ mode (35 Mbps VBR) or approx. 280 minutes in SP mode (25 Mbps CBR) on a single 64-GB SxS memory card. Equipped with two SxS memory card slots, the PMW-F3K/F3L makes transition seamless without any frame loss, when recording is done across two cards.

High-quality uncompressed audio recording

In addition to HD video recording, the PMW-F3K/F3L can record and play back high-quality, two-channel 16-bit, 48-kHz linear PCM uncompressed audio.

IT friendly

The file-based recording in MP4 format allows material to be handled with great flexibility in an IT-based environment, easily available for copying, transferring, sharing, and archiving.

Instant-access thumbnail display with "Expand" function

Each time a recording is started and stopped on the camcorder, the video and audio signals are recorded as one clip.
Furthermore, thumbnails are automatically generated for each clip as a visual reference, allowing the operator to cue-up to a desired scene simply by guiding the cursor to a thumbnail. For further convenience, the 'Expand' function allows one selected clip in the Thumbnail display to be divided into 12 equal time intervals, each with its own thumbnail identifier. This is useful if you wish to quickly search for a particular scene within a lengthy clip.

S-Log gamma and MLUT (Monitor Look Up Table) usable

The PMW-F3K/F3L can use S-Log(Sony Log) gamma and MLUT when the CBK-RGB01 RGB and S-LOG Output Option (not supplied) is installed and RGB444 is selected for Dual-Link

output. This feature is effective when you create digital masters using digital processing.

Cutting-edge Camera Technologies

Super 35-mm type "Exmor"[1] CMOS sensor

The PMW-F3K/F3L is equipped with a newly developed Super 35 "Exmor" CMOS sensor, which delivers excellent picture performance with full HD resolution.

PL lens mount with hot shoes

The camcorder is equipped with hot shoes for the Cooke[3] /i Intelligent Electronic Lens System in addition to the dedicated lenses supplied with the PMW-F3K. When a lens with corresponding characteristics is mounted, information regarding the lens, such as the type, serial number, iris setting, and focus position, may be available for on-screen displays and metadata recording.

Focus-assistance functions

Functions for easy and precise focus adjustments are provided.

- Expanded Focus
- Peaking

Creative Recording Modes and Settings

23.98P native recording

The PMW-F3K/F3L camcorder, a new member of Sony's legendary CineAlta[1] family, though compact offers native 23.98P recording capability.

Slow & Quick Motion function

The PMW-F3K/F3L offers a Slow & Quick Motion function, commonly known as overcranking and undercranking in film shooting, which enables you to create unique 'looks' or special effects of slow- and fast-motion images.

Slow Shutter function

The PMW-F3K/F3L offers a Slow Shutter function for capturing clear images in low-light environments.

Selectable gamma curves

The PMW-F3K/F3L provides various types of gamma identical to those of other CineAlta camcorders.

Interval Recording function

The PMW-F3K/F3L offers an Interval Recording function that intermittently records signals at pre-determined intervals. This is convenient for shooting over long periods of time and also when creating pictures with special effects of extremely quick motion.

Frame Recording function

Frame Recording is a unique feature of the PMW-F3K/F3L camcorder that is especially useful for clay-animation shooting. With this function, images for pre-determined frame are recorded each time the record button is pressed.

Shutter-angle settings

In addition to the electric shutter speed controls, the PMW-F3K/F3L also has a "shutter angle" control, which is familiar to cinematographers.

Picture Profile feature

The Picture Profile feature allows the camera operator to easily call up customized picture-tonal settings to suit particular shooting conditions.

Picture Cache function

The unit can utilize its internal memory to store the image being captured, allowing recording to commence a certain time (15 seconds at maximum) in advance of when the recording button is pressed.

Planning Metadata function

The PMW-F3K/F3L can load planning metadata prepared by a computer and shoot with the clip names and shot marks specified in the planning metadata.

Wireless LAN supported

The PMW-F3K/F3L can be connected to a computer via a wireless LAN (Wi-Fi connection) when the CBK-RGB01 RGB and S-LOG Output Option (not supplied) is installed and the CBK-WA01 Wi-Fi Adapter is connected to the Option connector.

A Wi-Fi connection allows you to transfer planning metadata from a computer to the camcorder, and to transfer clips and other files from the camcorder to a computer. You can also use the Live Logging function to transfer metadata to a computer or receive them from a computer during shooting.

3D-Link function for easy 3D shooting

The 3D-Link function can be enabled by installing the separately available CBK-3DL01 3D-Link Option and connecting two PMW-F3K/

F3L units with the exclusive 3D-Link cable (supplied with the CBK-3DL01).
Specifying one PMW-F3K/F3L unit as the main unit and the other as the sub unit, you can synchronize the signal phase and timecode for images being recorded on the sub unit by operating the main unit to start/stop recording on two units in synchronization. In addition, you can collectively copy the camera settings of the main unit to the sub unit and simultaneously change the electronic shutter speed for the sub unit in conjunction with those for the main unit, thus enabling easy and smooth 3D shooting.

A variety of functions and designs for high operability

- Depth-of-field indicator
- Brightness-level display
- Histogram indicator
- 3.5-inch color LCD monitor
- Easy-to-see color viewfinder
- Eight assignable buttons
- Long operating time with a battery pack
- Wide array of interfaces, including USB, i.LINK[1)], and HDMI[4)]
- ATW (Auto Tracing White Balance)
- Built-in ND filter wheel and electric CC filter (5600K)
- Selectable gain
- High-speed picture search: ×4, ×15, ×24
- Freeze Mix function
- Image Inversion function (horizontal only)
- IR Remote Commander[1)] supplied
- Input/output connectors for external synchronization
- Operations from the optional remote control units: The camcorder can be operated from the RM-B750/B150 Remote Control Unit.

1) Sony, XDCAM, XDCAM EX, SxS, i.LINK, Exmor, CineAlta, and Remote Commander are trademarks of Sony Corporation.
2) HDV is a trademark of Sony Corporation and Victor Company of Japan, Limited.
3) Cooke Optics Limited
4) HDMI, HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing, LLC in the United States and other countries.

All other trademarks are the property of their respective owners.

XDCAM EX web sites

For information on XDCAM EX, visit the following web sites:

United States
http://www.sony.com/xdcamex

Canada
http://www.sony.ca/xdcamex

Europe, Middle East, Africa, and Russia
http://www.sonybiz.net/xdcamex

Latin America
http://www.sonypro-latin.com/xdcamex

Australia
www.sony.com.au/xdcamex

Asia (except Korea, China, and Japan)
http://pro.sony-asia.com

Korea
http://bp.sony.co.kr/xdcamex

China
http://pro.sony.com.cn/minisite/XDCAMEX

Japan
http://www.sony.co.jp/XDCAMEX

Using the CD-ROM

Two CD-ROMs are supplied with the camcorder.

The CD-ROM labeled “Manuals for Solid-State Memory Camcorder” contains the PDF files of Operating Instructions for the camcorder (English, Japanese, French, German, Italian, Spanish and Chinese).

The CD-ROM labeled “Utility Software for XDCAM” contains application and device driver software required to access to SxS memory cards from a computer and to manage material shot with the camcorder.
Information about how to install the software is provided in PDF format.

Note

You must install the SxS device driver on your computer if your computer is equipped with an ExpressCard slot and you want to use it to access SxS memory cards.

Reading the CD-ROM Manuals

Preparations

The following program must be installed on your computer in order to read the documents contained on the CD-ROM.

Adobe Reader Version 6.0 or higher

Memo

If Adobe Reader is not installed, you can download it from the following URL:

http://www.adobe.com/

Adobe and Adobe Reader are trademarks of Adobe Systems Incorporated in the United States and/or other countries.

To read the documents

Do the following:

1 **Insert the CD-ROM in your CD-ROM drive.**

A cover page appears automatically in your browser.
If it does not appear automatically in the browser, double-click on the index.htm file on the CD-ROM.

2 **Select and click on the manual that you wish to read.**

This opens the PDF file.

Memo

The files may not be displayed properly, depending on the version of Adobe Reader. In such a case, install the latest version you can download from the URL mentioned in “Preparations” above.

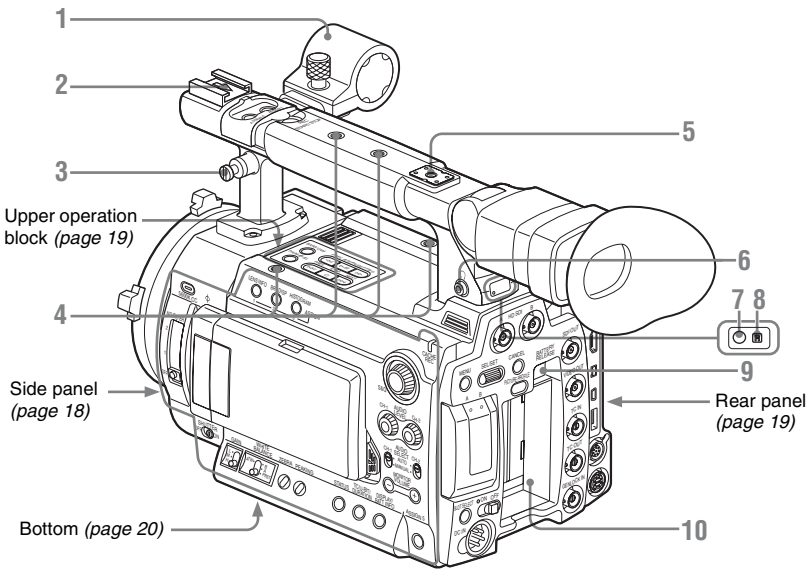
Note

If you have lost or damaged the CD-ROM, you can purchase a new one to replace it. Contact your Sony service representative.

Parts Identifications

For functions and usage, see the pages shown in parentheses.

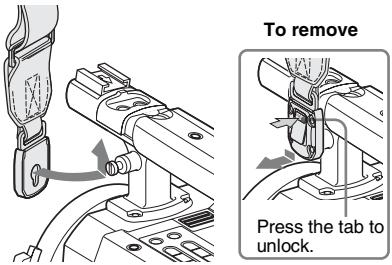
Camcorder



1. **Microphone holder** ***(page 34)***
2. **Front accessory shoe**

   Note

   Do not apply excessive force to the mounted accessory. It may damage the accessory shoe.
3. **Post for the shoulder strap (left and right)**
   Attach the supplied shoulder strap as shown below.



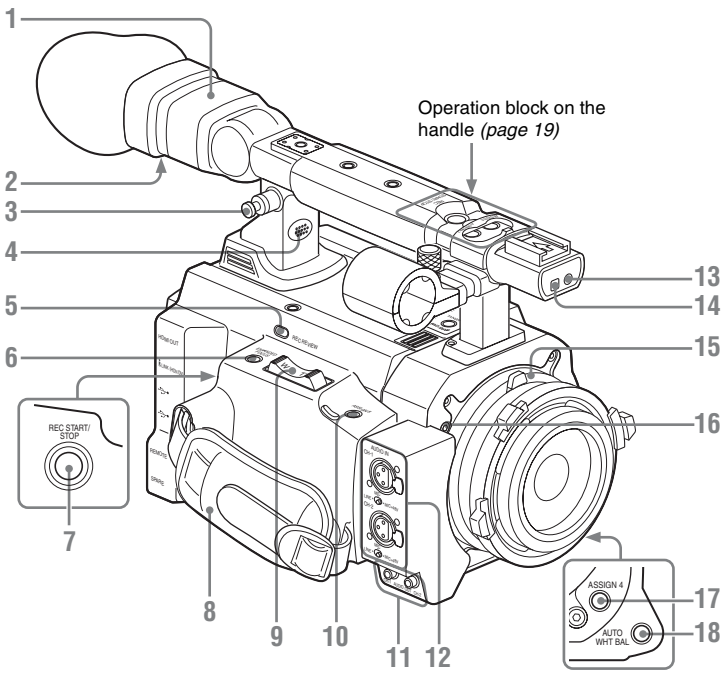
4. **Accessory mounting screw holes**
   Type of screw: 1/4-20UNC, length of engagement: 10 mm ($^{13}/_{32}$ inch) or less

   Note

   Do not apply excessive force to the mounted accessory. It may damage the screw thread.
5. **Rear accessory shoe**

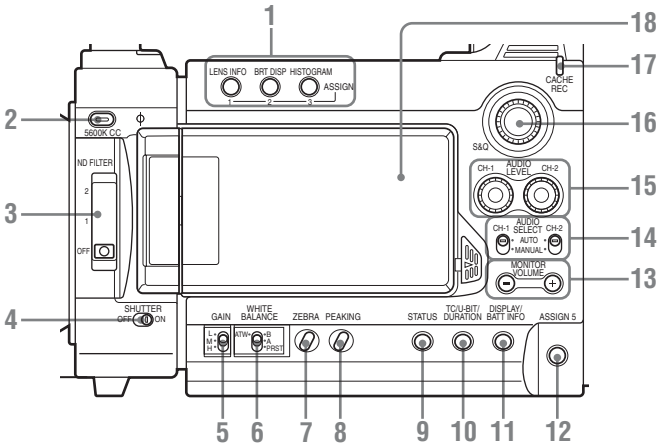
   Notes

   - The length of engagement should be 5.2 mm ($^{7}/_{32}$ inch) or less.
   - Do not apply excessive force to the mounted accessory. It may damage the screw thread.
6. **Headphone connector (stereo mini jack)** ***(page 60, page 93)***
7. **Rear tally lamp** ***(page 41, page 152)***
8. **Rear IR remote control receptor**
9. **BATTERY RELEASE button** ***(page 24)***
10. **Battery pack receptacle** ***(page 24)***



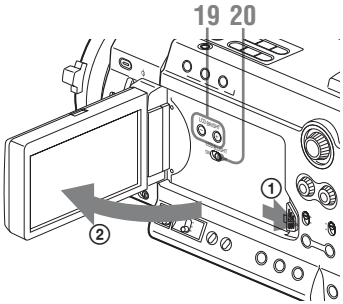
1. **Viewfinder** *(page 29)*
2. **Eyepiece focusing knob** *(page 29)*
3. **Post for the shoulder strap** *(See the previous page.)*
4. **Built-in speaker (***page 60***, *page 93*)**
5. **REC REVIEW button** *(page 63)*
6. **EXPANDED FOCUS button** *(page 54)*
7. **REC START/STOP button** *(page 41)*
8. **Grip belt**
9. **Servo zoom lever**
   (It functions only with an optional power zoom lens attached.)
10. **ASSIGN 8 (assignable 8) button** *(page 64)*
11. **AUDIO OUT CH-1/CH-2 connectors (RCA phono jacks)** *(page 137)*
12. **AUDIO IN CH-1/CH-2 connectors (XLR) and input selection switches** *(page 59)*
13. **Front tally lamp (***page 41***, *page 152*)**
14. **Front IR remote control receptor**
15. **Lens mount** *(page 31)*
16. **Flange focal length adjustment screw** *(page 32)*
17. **ASSIGN 4 (assignable 4) button** *(page 64)*
18. **AUTO WHT BAL (automatic white balance adjustment) button** *(page 46)*

Side panel



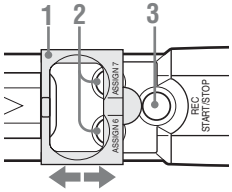
1. **ASSIGN (assignable) 1/2/3 buttons** ***(page 64)***
2. **5600K CC (color compensation filter) button with indicator** ***(page 45)***
3. **ND FILTER switch** ***(page 45)***
4. **SHUTTER switch** ***(page 51)***
5. **GAIN switch** ***(page 50)***
6. **WHITE BALANCE (white balance memory) switch** ***(page 46)***
7. **ZEBRA button** ***(page 49)***
8. **PEAKING button** ***(page 54)***
9. **STATUS button** ***(page 104)***
10. **TC/U-BIT/DURATION (time data selection) button (*page 58*, *page 93*)**
11. **DISPLAY/BATT INFO button (*page 22*, *page 25*)**
12. **ASSIGN 5 (assignable 5) button** ***(page 64)***
13. **MONITOR VOLUME buttons (*page 60*, *page 93*)**
14. **AUDIO SELECT (audio level control mode selection) switches** ***(page 59)***
15. **AUDIO LEVEL CH-1 /CH-2 controls** ***(page 59)***
16. **S&Q (Slow & Quick Motion) dial (*page 70*, *page 110*)**
17. **CACHE REC lamp** ***(page 68)***
18. **LCD (Liquid Crystal Display) monitor** ***(page 28)***

    The display is turned on when you unlock the panel by pressing the tab to the right then open it.



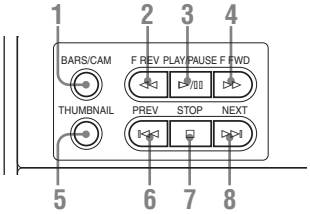
19. **LCD BRIGHT +/– (LCD brightness adjustment) buttons** ***(page 28)***
20. **LCD B.LIGHT (LCD backlight) switch** ***(page 28)***

Operation block on the handle



1. **Protective cover** ***(page 41)***
2. **ASSIGN 6/7 (assignable 6 and 7) buttons** ***(page 64)***
3. **REC START/STOP (recording start/stop) button** ***(page 41)***

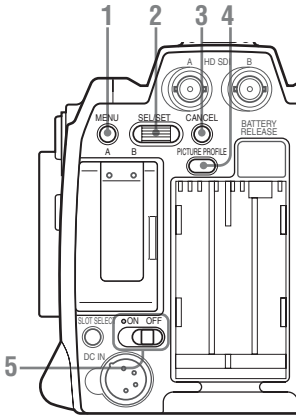
Upper operation block



1. **BARS/CAM (color bar/camera signal switching) button** ***(page 60)***
2. **F REV (fast reverse) button** ***(page 92)***
3. **PLAY/PAUSE button** ***(page 92)***
4. **F FWD (fast forward) button** ***(page 92)***
5. **THUMBNAIL button** ***(page 88)***
6. **PREV (previous) button** ***(page 92)***
7. **STOP button** ***(page 92)***
8. **NEXT button** ***(page 92)***

Rear panel

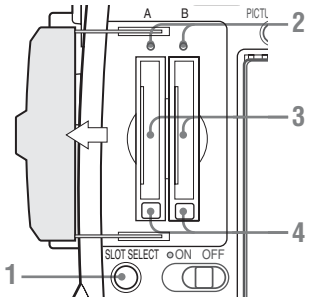
Operation block



1. **MENU (menu display ON/OFF) button** ***(page 110)***
2. **SEL/SET (selection/set) dial (Jog dial)** ***(page 110)***
   It functions accordingly when you turn it up or down, or you push it horizontally.
3. **CANCEL button** ***(page 110)***
4. **PICTURE PROFILE button** ***(page 73)***
5. **Power switch and indicator** ***(page 26)***

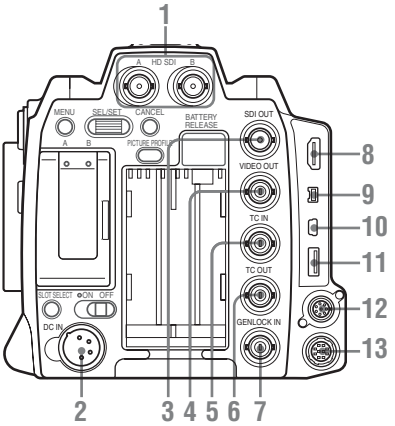
Card slot block

Open the cover to insert/remove SxS memory cards.



1. **SLOT SELECT (SxS memory card select) button** ***(page 39)***
2. **Access lamps** ***(page 38)***
3. **SxS memory card slots** ***(page 38)***
4. **Eject buttons** ***(page 38)***

Connector block



1. **HD SDI A/B (Dual-Link) connectors (BNC type)** ***(page 138)***
2. **DC IN (DC power input) connector** ***(page 25)***
3. **SDI OUT connector (BNC type)** ***(page 137)***
4. **VIDEO OUT (analog video output) connector (BNC type)** ***(page 137)***
5. **TC IN (timecode input) connector (BNC type)** ***(page 144)***
6. **TC OUT (timecode output) connector (BNC type)** ***(page 145)***
7. **GENLOCK IN connector (BNC type)** ***(page 144)***
8. **HDMI OUT connector** ***(page 137)***
9. **i.LINK (HDV/DV) connector (4-pin, S400 conforming to IEEE1394)** ***(page 141)***
10. **USB connector (Mini B)** ***(page 138)***
11. **Option connector (USB type A)**
    The optional CBK-WA01 Wi-Fi Adapter can be connected.

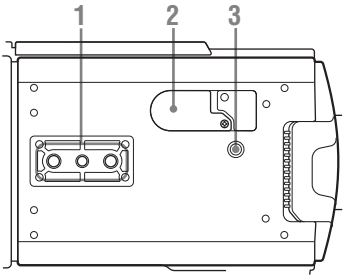
    For connection, refer to the Supplement in the supplied CD-ROM labeled "Manuals for Solid-State Memory Camcorder."

    For the mounting bracket for the Wi-Fi Adapter (Part No. 4-410-322-01), contact your Sony dealer or Sony service representative.
12. **REMOTE connector (8-pin)**
    An external remote control device, such as the RM-B150/B750 Remote Control Unit, can be connected.

    For operation from the remote control device, refer to the Supplement in the supplied CD-ROM labeled "Manuals for Solid-State Memory Camcorder."
13. **SPARE connector (10-pin)**
    When the separately available CBK-3DL01 3D-Link Option is installed, connect another PMW-F3K/F3L unit here using the 3D-Link cable supplied with the CBK-3DL01.

    For connection, refer to the Supplement in the supplied CD-ROM labeled "Manuals for Solid-State Memory Camcorder."

Bottom



1. **Tripod receptacles**

   Note

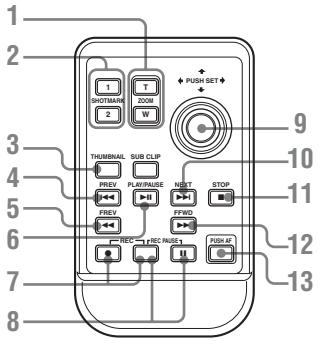
   Check that the size of the hole matches the screw of the tripod. If they do not match, the camcorder cannot be attached to the tripod securely.
2. **Backup battery holder** ***(page 148)***
3. **Accessory mounting screw hole**
   Type of screw: 1/4-20UNC, length of engagement: 10 mm ($^{13}/_{32}$ inch) or less

   Note

   Do not apply excessive force to the mounted accessory. It may damage the screw thread.

IR Remote Commander (Supplied)

The buttons without remarks can be used in the same manner as the corresponding buttons on the camcorder.



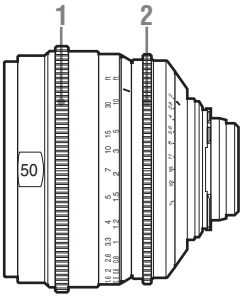
1. **ZOOM T/W (telephoto/wide-angle) button**
   (It functions only with an optional power zoom lens attached.)
2. **SHOTMARK 1 and 2 buttons (*page 61*, *page 102*)**
3. **THUMBNAIL button**
4. **PREV (previous clip jump) button**
5. **F REV (fast reverse) button**
6. **PLAY/PAUSE button**
7. **REC (record) buttons**
   Press the ● button together with the unmarked button (safety button) to start recording.
8. **REC PAUSE buttons**
   Press the ❚❚ button together with the unmarked button (safety button) to pause recording.
9. **PUSH SET button**
   It functions the same as the SEL/SET dial on the camcorder.
10. **NEXT button**
11. **STOP button**
12. **F FWD (fast forward) button**
13. **PUSH AF button**
    (It functions only with an optional lens which supports auto focus control attached.)

Note

The SUB CLIP button does not function with this camcorder.

When you use the Remote Commander, see "Using the IR Remote Commander" on page 35.

Lenses (Supplied with the PMW-F3K)



The illustration shows the SCL-P50T20.

1. **Focus ring**
2. **Iris ring**

On-Screen Indications

Indications in E-E Display/Recording Mode

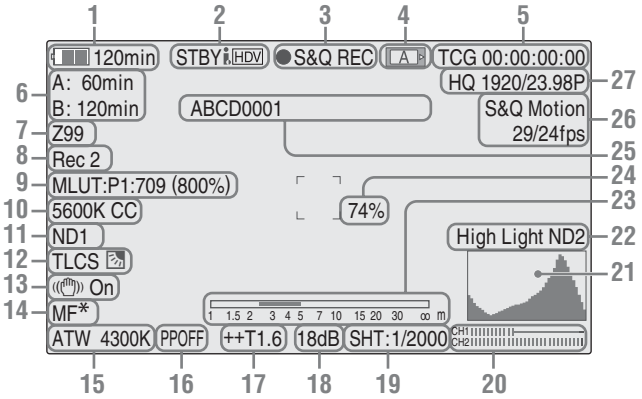
When this unit is in E-E Display[1)]/Recording mode, pressing the DISPLAY/BATT INFO button displays the statuses and settings of this unit on the LCD monitor/viewfinder screen. When you press the DISPLAY/BATT INFO button again, these indications are canceled. The recording status indication, such as "●REC," is always displayed, regardless of operation of the DISPLAY/BATT INFO button.

1) E-E Display mode: Recording standby status

Remarks

M: The indication of the items named with this suffix can be independently turned on/off with "Display On/Off" of the LCD/VF SET menu *(see page 122)*.

A: The indication of items named with this suffix can be turned on/off using the assignable buttons to which the corresponding on/off functions have been assigned *(see page 64)*.



1. **Battery remaining/DC IN voltage indication** M *(page 25)*

2. **i.LINK status indication** *(page 141)*
Only when an external device is connected to the i.LINK connector, the status of the device is displayed.

3. **Special recording/operation status indication**

●REC	Recording in progress
STBY	Standby for recording
●S&Q REC	Slow & Quick Motion recording in progress
S&Q STBY	Standby for Slow & Quick Motion recording
●INT REC	Interval Recording in progress
INT STBY	Standby for Interval Recording
●FRM REC	Frame Recording in progress
FRM STBY	Standby for Frame Recording
●CACHE	● in green: Standby for Cache Recording
	● in red: Cache Recording in progress

4. **Media status indication**

A	Memory card in slot A is active.
B	Memory card in slot B is active.

5. **Time data indication** M *(page 58)*

6. **Media remaining indication** M *(page 39)*

7. **Zoom position indication** [M] ***(page 54)***
8. **Synchronized recording indication** ***(page 120)***
   Displayed when "HD SDI Remote I/F" is selected with "SDI REC Control" of the VIDEO SET menu.
9. **S-Log LUT indication** ***(page 120)***
10. **Electric color compensation filter indication** [M] ***(page 45)***
11. **ND filter indication** [M] ***(page 45)***
12. **TLCS mode indication** [M] ***(page 115)***

	Backlight mode
	Standard mode
	Spotlight mode

13. **Steady shot indication** [M]
    (Available only when an optional lens which supports the steady shot function is attached)
14. **Focus mode indication** [M]
    (Available only when an optional lens which supports focus control is attached)
15. **White balance mode and color temperature indications** [M] ***(page 46)***
16. **Picture profile indication** [M] ***(page 73)***
17. **Iris position indication** [M] ***(page 53)***
18. **Gain indication** [M] ***(page 50)***
19. **Shutter mode/shutter speed indication** [M] ***(page 51)***
20. **Audio level meters** [M] ***(page 59)***
21. **Histogram indication** [M] [A]
22. **Video level cautioning indication** [M]
    If the video level is too high or too low, a caution is generated showing the appropriate ND filter number.
23. **Depth-of-Field indication** [M] [A]
24. **Brightness level indication** [M] [A]
25. **Clip name indication** ***(page 84)***
26. **Special recording mode indication** [M]

Frame Rec	Frame Rec mode
Interval Rec	Interval Rec mode
S&Q Motion xx/xx fps	Slow & Quick Motion mode

27. **Video Format indication** [M] ***(page 43)***

Power Supply

You can use a battery pack or AC power via an AC adaptor.
If you connect an AC power source, it has a priority even if a battery pack is mounted.

For safety, use only the Sony battery pack and AC adaptor listed below:
- BP-U60 Lithium-ion Battery Pack
- AC-DN10 AC Adaptor

Using a Battery Pack

Mount a BP-U60 Lithium-ion Battery Pack.

WARNING

Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.
When you dispose of the battery, you must obey the law in the relative area or country.

AVERTISSEMENT

N'exposez pas les batteries à une chaleur excessive, au soleil ou près d'un feu par exemple.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Lorsque vous mettez la batterie au rebut, vous devez respecter la législation en vigueur dans le pays ou la région où vous vous trouvez.

WARNUNG

Akkus dürfen keinesfalls übermäßiger Wärmeeinwirkung ausgesetzt werden, wie z.B. Sonneneinstrahlung, Feuer o. ä.

VORSICHT

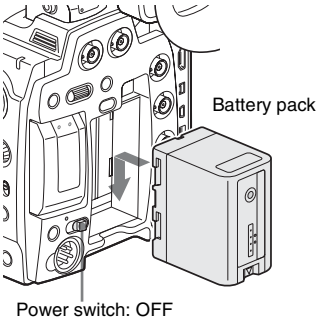
Explosionsgefahr bei Verwendung falscher Batterien. Batterien nur durch den vom Hersteller empfohlenen oder einen gleichwertigen Typ ersetzen.
Wenn Sie die Batterie entsorgen, müssen Sie die Gesetze der jeweiligen Region und des jeweiligen Landes befolgen.

Notes

- Before use, charge the battery pack with the exclusive BC-U1/U2 Battery Charger.
- A warm battery pack immediately after use may not be able to be fully recharged.

Mounting the battery pack

Fully insert the battery pack then slide it down to lock.

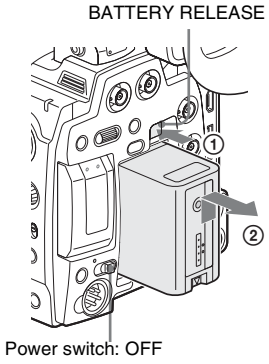


Note

If a battery pack that cannot be used with this camcorder is mounted, an error message is appears on the LCD monitor/viewfinder screen. Replace the battery pack with the BP-U60, or connect a power to the DC IN connector after removing the battery pack.

Removing the battery pack

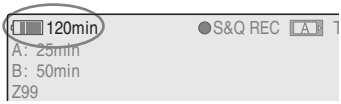
Hold the BATTERY RELEASE button pressed, slide the battery pack upwards to unlock, then pull it out.



Checking battery charge remaining

To check during operation

When recording or playback is in progress on the battery pack, an icon to show the current battery charge level and usage time remaining are displayed on the LCD monitor/viewfinder screen.



Icon	Remaining
	100% to 91%
	90% to 71%
	70% to 51%
	50% to 31%
	30% to 11%
	10% to 0%

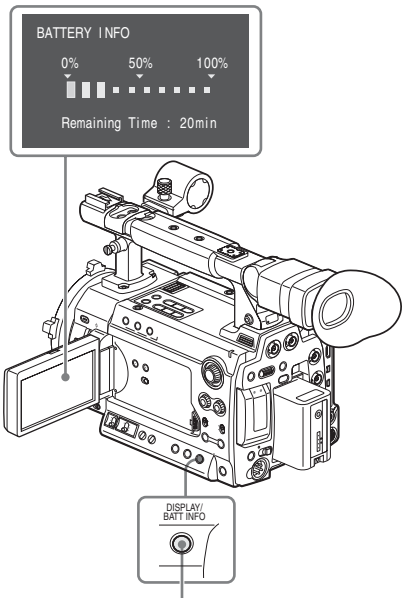
The camcorder indicates the remaining usage time in minutes by calculating the available time with the battery pack if operation is continued at the current rate of power consumption.

Note

The operating time on a battery pack depends on the condition (new or old) of the battery pack and the ambient temperature.

To check in power-off status

Information on the mounted battery pack (BATTERY INFO) is displayed on the LCD monitor screen when you hold the DISPLAY/BATT INFO button pressed even if the camcorder is off.
The BATTERY INFO display goes off after 5 seconds.



DISPLAY/BATT INFO button

If the battery charge remaining becomes low

If the battery charge remaining decreases to a certain level during operation (Low BATT status), a low-battery message, flashing of the tally lamps, and a beep sound will warn you.
If the remaining further decreases to a level at which operation cannot be continued (BATT Empty status), a battery-empty message appears. Temporarily set the power switch to OFF and connect a power source via the DC IN connector or replace the battery pack with one that is fully charged.

To change the message levels

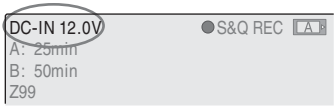
The Low BATT level is set to 10% of full charge, and the BATT Empty level is set to 3% of full charge at the factory. These settings can be changed with “Battery Alarm” *(page 128)* of the OTHERS menu.

Using AC Power (DC IN Power)

The camcorder can be operated on AC power by using an AC-DN10 AC Adaptor (optional) with a CCDD-X2 DC Cable (optional).

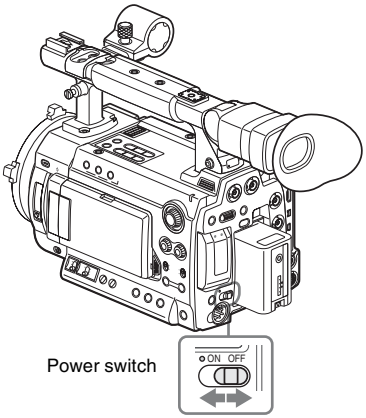
For details, refer to the Operating Instructions of the AC-DN10.

When recording or playback is in progress on power from the DC IN connector, the input voltage is displayed on the LCD monitor/ viewfinder screen.



Turning Power On

Set the power switch to the ON position.
The indicator (green) lights and the camcorder enters E-E Display mode.



Turning Power Off

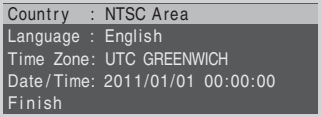
Set the power switch to the OFF position.

Notes

- This camcorder uses a little standby power even when the power switch is set to OFF. Remove the battery pack if the camcorder will not be used for a prolonged period.
- When removing the battery pack or the DC IN power, be sure to set the switch to OFF in advance and wait until the indicator goes dark. Removing the battery pack or the DC IN power while the indicator is lit may cause damage to the camcorder or SxS memory cards.

Setting the Area of Use and the Clock

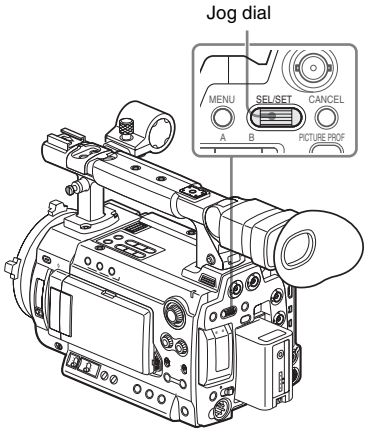
When you turn the camcorder on for the first time after purchasing or replacing the backup battery *(page 148)*, the Initial Setting display appears on the LCD monitor/viewfinder screen.
Set the area of use and the date and time of the built-in clock, using this display.



Language
You can select the language for messages.
When you select “Chinese,” the menus and status indications are also displayed in Chinese.

Time Zone
The value shows the time difference from UTC (Coordinated Universal Time).
Change the setting if needed.

Use the jog dial on the rear panel for setting.



Setting the area of use

1 Turn the jog dial to set the cursor to “Country” then press the dial.

2 Turn the jog dial to select the desired area of use.

Setting	Area of use
NTSC Area	NTSC area (for areas other than Japan) 1)
NTSC(J) Area	NTSC area (Japan) 2)
PAL Area	PAL area 3)

1) The composite signal output from this camcorder is an NTSC signal with a black setup (7.5 IRE). The system frequency is 59.94i.

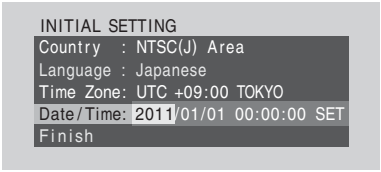
2) The composite signal output from this camcorder is an NTSC signal with no black setup. The system frequency is 59.94i.

3) The composite signal output from this camcorder is a PAL signal. The system frequency is 50i.

Setting the time and date

1 Turn the jog dial to set the cursor to "Date/Time" then press the dial.

The cursor moves to the year-setting column.



2 Turn the jog dial to set the year then press the dial.

The cursor moves to the month-setting column.

3 Set the month, day, hour, minute, and second in sequence in the same manner.

When you press the jog dial at "SET," the cursor moves back to "Date/Time."

To finish the setting

Move the cursor to "Finish" then press the jog dial.

The Initial Setting display disappears, and the clock setting is completed.

Once after the Initial Setting display disappears, the time zone and date/time settings can be changed using the OTHERS menu *(page 126)*.

For details on menu operations, see "Basic Menu Operations" on page 110.

Notes

- If the clock setting is cleared because of exhaustion of the backup battery while no operation power was being supplied (no battery pack and no DC IN connection), the Initial Setting display will be displayed when you turn the camcorder on at the next opportunity.
- While the Initial Setting display is shown, no other operation except turning the power off is permitted until you finish the setting for this display.

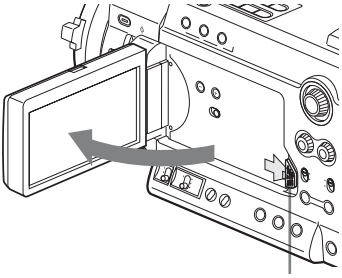
Adjusting the LCD Monitor and Viewfinder

Adjusting the LCD Monitor

You can adjust the angle and the display conditions of the LCD monitor for the best view in various shooting situations.
These adjustments of the LCD monitor have no effect on pictures being recorded.

Turning on/off the LCD monitor

The LCD monitor turns on when it is opened and turns off when it is closed.



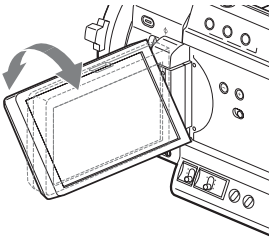
Press the tab to the right to unlock.

Note

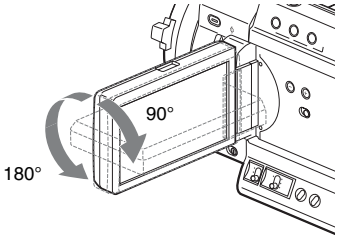
Do not apply excessive force to the opened LCD monitor in the direction to open it farther.
It may damage the LCD monitor and the unit.

Adjusting the angle

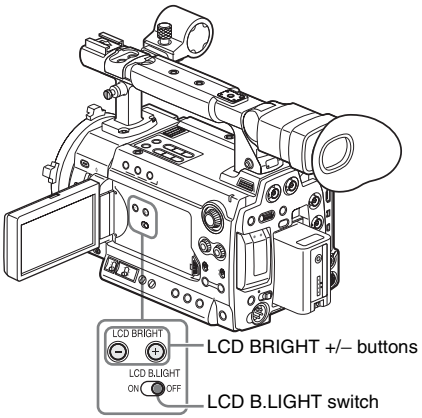
Rotate the opened LCD monitor to the desired angle.



It can be rotated as much as 180 degrees in the direction facing the subject and as much as 90 degrees in the opposite direction.
When you rotate it exceeding 135 degrees toward the subject, the image on the monitor becomes upside down, indicating the mirror image of the subject. The display direction of the textual information is converted to the readable direction.



Adjusting the backlight



Turning the backlight on/off

The backlight may not be necessary for viewing images on the LCD monitor under bright ambient light, such as in an outdoor location. Set the LCD B.LIGHT switch to OFF to turn off the backlight.

Adjusting the brightness of the backlight

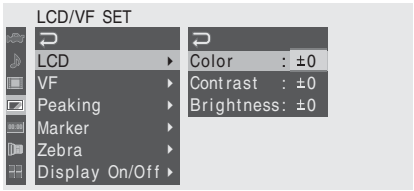
When you set the LCD B.LIGHT switch to ON, you can adjust the brightness of the backlight, using the LCD BRIGHT + and – buttons.
Press the – button to darken the backlight. Press the + button to make it brighter.
During adjustment, the backlight level bar appears to indicate the adjustment value.

Adjusting the color, contrast, and brightness

Using the menu

The color, contrast, and brightness of the LCD monitor can be adjusted with the LCD/VF SET menu.

Press the MENU button to set the camcorder to Menu mode and select (LCD/VF SET menu) then “LCD” from the menu.



Set color, contrast and brightness of the LCD monitor with the corresponding LCD menu items: Color, Contrast, and Brightness.

For details on menu operations, see “Basic Menu Operations” on page 110.

Using the assignable button

If you assign “LCD/VF Adjust” to one of the assignable buttons, you can adjust the contrast and brightness of the LCD monitor, using the assignable button and the jog dial.

For how to assign the function, see “Changing Functions of the Assignable Buttons” on page 64.

1 Press the assignable button to which “LCD/VF Adjust” is assigned.

The LCD Brightness Level bar is displayed on the LCD monitor.

2 Adjust the brightness by turning the jog dial vertically.

Turning the dial upwards makes the brightness brighter, and downwards makes it darker.

3 Press the assignable button again.

The LCD Contrast Level bar is displayed on the LCD monitor.

4 Adjust the contrast by turning the jog dial vertically.

Turning the dial upwards makes the contrast stronger, and downwards makes it weaker.

5 After the adjustment, press the jog dial or the CANCEL button to turn off the level bar.

Adjusting the Viewfinder

If the picture on the LCD monitor is hard to view under bright ambient light, you can use the viewfinder to check the picture.

You can adjust the display conditions of the viewfinder according to your current lighting conditions.

These adjustments of the viewfinder have no effect on pictures being recorded.

Caution

Do not leave the camcorder with the eyepiece of the viewfinder facing the sun. Direct sunlight can enter through the eyepiece, be focused in the viewfinder, and cause fire.

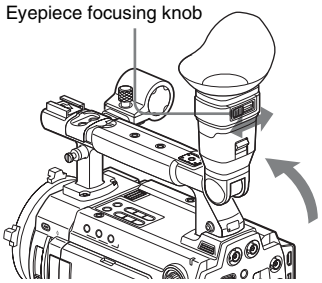
Turning the viewfinder on/off

With the factory setting, the viewfinder is turned on when the LCD monitor is in its park position or is rotated to face the subject.

You can change the setting so that the viewfinder is always on regardless of the status of the LCD monitor, using “VF” *(page 121)* of the LCD/VF SET menu. Change the “Power” setting from “Auto” to “On.”

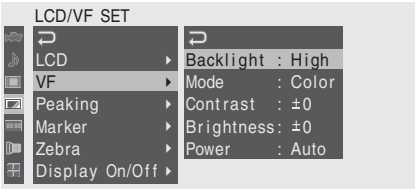
Adjusting the focus in the viewfinder

The eyepiece focusing (diopter compensation) knob enables adjustment to match the eyesight of operator so that the operator can view the image clearly in the eyepiece.



Adjusting the backlight

The brightness of the backlight for the viewfinder can be switched between High and Low.
Select “VF” from the LCD/VF SET menu and set “Backlight.”



Switching between color and monochrome modes

For the viewfinder screen, color or monochrome display can be selected.
Select “VF” from the LCD/VF SET menu then select “Mode.”
Select “B&W” if checking the subject and focusing are easier on the monochrome display.
If you assign “VF Mode” to one of the assignable buttons *(see page 64)*, you can switch between color and monochrome by pressing the button.

Adjusting the contrast and brightness

Using the menu

Select “VF” from the LCD/VF SET menu and adjust the contrast and brightness with the corresponding items: Contrast and Brightness.

For details on menu operations, see “Basic Menu Operations” on page 110.

Using the assignable button

If you assign “LCD/VF Adjust” to one of the assignable buttons, you can adjust the contrast and brightness of the viewfinder, using the assignable button and the jog dial.

For how to assign the function, see “Changing Functions of the Assignable Buttons” on page 64.

1 Press the assignable button to which “LCD/VF Adjust” is assigned.

The LCD Brightness Level bar is displayed on the LCD monitor.

2 Press the assignable button twice to display the VF Brightness Level bar.

3 Adjust the brightness by turning the jog dial vertically.

Turning the dial upwards makes the brightness brighter, and downwards makes it darker.

4 Press the assignable button again.

The VF Contrast Level bar is displayed on the LCD monitor.

5 Adjust the contrast by turning the jog dial vertically.

Turning the dial upwards makes the contrast stronger, and downwards makes it weaker.

6 After the adjustment, press the jog dial or the CANCEL button to turn off the level bar.

Attaching a Lens

Usable lenses

The following lenses are supplied with the PMW-F3K.

- SCL-P35T20 (focal length: 35mm)
- SCL-P50T20 (focal length: 50mm)
- SCL-P85T20 (focal length: 85mm)

In addition to equivalents of the lenses supplied with the PMW-F3K, various PL-mount lenses can be used with the PMW-F3K/F3L.

The following optional lens can also be used with the camcorder.

- SCL-Z18X140 FZ Power Zoom Lens 14.0X

For other lenses usable with the PMW-F3K/F3L, ask a Sony service representative.
For information on handling optional lenses, refer to the operation guide of the lenses.

Caution

Do not leave the camcorder with the lens facing the sun. Direct sunlight can enter through the lens, be focused in the camcorder, and cause fire.

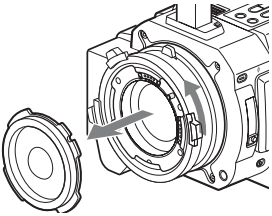
Attaching a Lens

Notes

- Turn off the camcorder before attaching/removing the lens.
- The lens is a precision component. Do not place it with the mount side down directly touching a surface. Be sure to attach the supplied cap.
- The camera interface of the camcorder is set to "Type C" for the lenses supplied with the PMW-F3K and those having a Cooke connector. When attaching a lens with an ARRI connector (usable in the future), set the interface to "Type A" with "Lens IF" *(page 116)* of the CAMERA SET menu. Or set it to "Off" for other lenses.
  If the interface setting is not correct, a warning message will be displayed when you turn on the camcorder.
  For details on menu operations, see "Basic Menu Operations" on page 110.

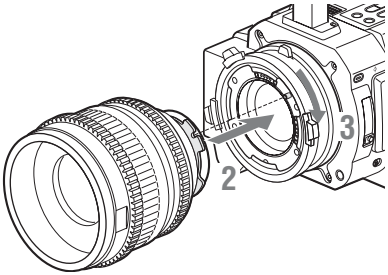
Attaching a PL-mount lens

1 Turn the lens mount frame counterclockwise and remove the mount cap from the lens mount.



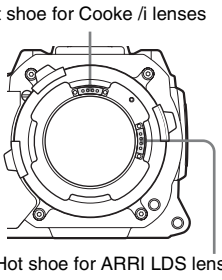
2 Align the recess of the lens with the alignment pin at the upper part of the lens mount of the camcorder and set the lens in place.

3 While holding the lens, turn the lens mount frame clockwise to secure the lens.



When using an ARRI[1)] LDS lens or a Cooke /i lens

Align the contacts of the lens with the corresponding hot shoe of the camcorder.



*1)*ARRI Group

If you have attached an aberration correction lens

The aberration correction function is activated automatically. Starting the camcorder with an aberration correction lens may require more time than normally because of data loading at start-up. The lenses supplied with the PMW-F3K are aberration correction lenses.

Contact a Sony service representative for information about other aberration correction lenses.

Adjusting the Flange Focal Length

Adjustment of the flange focal length (distance between the lens mount attachment plane and the imaging plane) is necessary in the following situations:

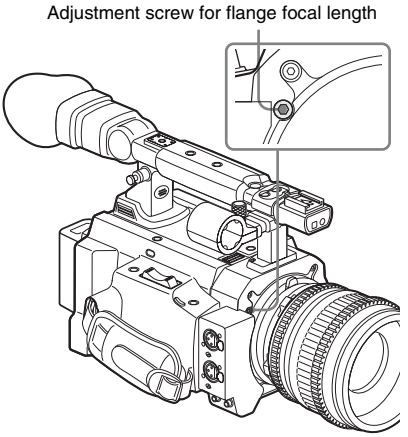
- The first time a lens is attached
- When changing lenses
- If the focus is not sharp at both telephoto and wide angle with a zoom lens

Manual adjustment of flange focal length

The flange focal length for this camcorder can be adjusted by rotating the adjustment screw.
Use an Allen wrench (sized 7/64 inch) for the adjustment.
Counterclockwise rotation lengthens the flange focal length and clockwise rotation shortens it. As the flange focal length must be finely adjusted, slowly rotate the screw.

Notes

- If the adjustment screw for flange focal length is rotated too far, the camcorder becomes unoperable. If you hear a click, stop rotating it.
- Be sure to use an Allen wrench of the specified size. Otherwise, the socket on the screw head may be damaged, making the screw unrotatable.



Automatic adjustment of flange focal length

The flange focal length can be automatically adjusted only when the optional SCL-Z18X140 (FZ power zoom lens 14.0X) is attached.
When automatic adjustment of flange focal length is activated, focusing is performed both at the wide-angle and telephoto ends of the zoom for flange focal length adjustment and the result is stored so that the in-focus condition is maintained even if you change the zoom position after focusing.

Notes

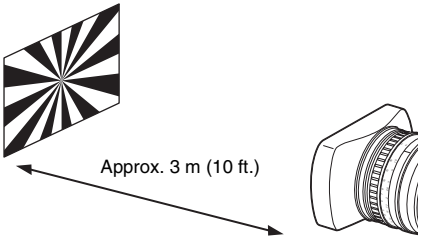
- If a subject of insufficient contrast is used, or if the camcorder or subject moves during the adjustment, adjustment cannot be made properly. Once the adjustment begins, do not touch the camcorder body or lens until it ends.
- When “Setting” of the “Slow Shutter” of the CAMERA SET menu is “On,” be sure to set it to “Off” before starting the adjustment.
- Be careful that no light source, such as a lamp, the sun, or a bright window, is in field of view during flange focal length adjustment.
- If the adjustment screw for flange focal length is rotated after the automatic adjustment of flange focal length, the adjusted flange focal length is shifted. Be careful not to rotate the adjustment screw after the automatic adjustment.

1 Set the power switch to ON.

2 Set the IRIS switch of the lens to AUTO.

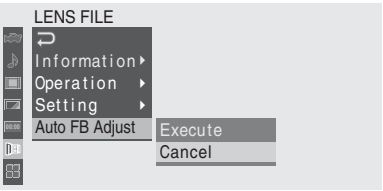
3 Place a high-contrast subject, such as a flange focal length adjustment chart, about 3 m (10 ft.) away from the camcorder, and light it well enough to provide a sufficient video output level.

Frame the subject so that it is located in the center at the telephoto end of the zoom. Make sure that any object located closer to the lens than the subject is out of frame at the wide-angle end.



4 Set the ZOOM switch to SERVO (Power Zoom mode).

5 Press the MENU button to set the camcorder to Menu mode, and select (the LENS FILE menu) then "Auto FB Adjust" from the menu.



For details on menu operations, see "Basic Menu Operations" on page 110.

6 Select "Execute."

The adjustment begins.
During adjustment, the in-progress message is displayed.
When the adjustment finished, the completion message is displayed.

If you press the CANCEL button during adjustment

Automatic adjustment of the flange focal length is aborted and the condition before starting the adjustment is resumed.

If the adjustment fails

An error message is displayed.
Check the conditions of the subject and lighting then perform the adjustment again.

Removing the lens

Proceed as follows:

1 While holding the lens, turn the lens mount frame counterclockwise.

2 Pull the lens forward to remove.

Note

When another lens is not immediately attached, attach the lens mount cap to its original position and secure it by turning the lens mount frame clockwise.

Using Lens Files

By your storing the data (such as compensation data) specific to the lenses in files, required adjustments and compensation can be performed merely by retrieving the appropriate file when changing lenses.

For details on the lens files, see "Lens Files" on page 135.

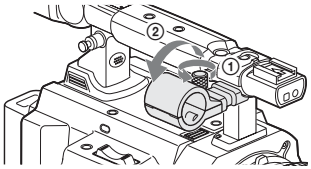
Attaching the Microphone

Two channels (CH-1/CH-2) of audio can be recorded (Linear PCM recording) in synchronization with video recording.

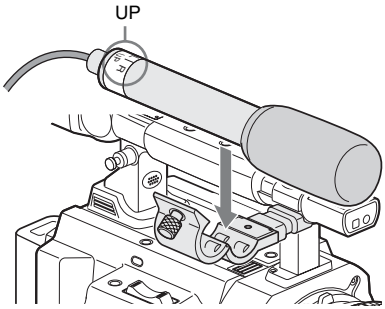
Using the Supplied Microphone

Attach the microphone as follows:

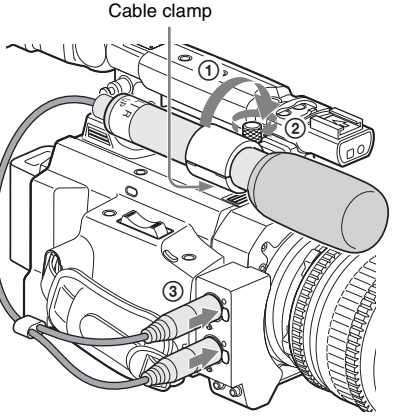
1 Loosen the screw of the microphone holder and open the cover.



2 Set the microphone on the holder with the UP indication facing up.

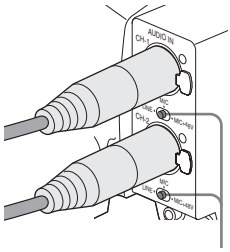


3 Close the microphone holder cover for the original condition to secure, then connect the microphone cable to the AUDIO IN connectors (CH-1 and CH-2) and secure the cable at the cable clamp under the holder.



Connect the white plug of the supplied microphone to the CH-1 connector of the camcorder and the red plug to the CH-2 connector.

4 Set the LINE/MIC/MIC+48V switches (CH-1 and CH-2) to MIC+48V.



5 Set "EXT CH Select" of "Audio Input" *(page 117)* of the AUDIO SET menu to "CH-1/CH-2."

Note

Even when recording CH-1 for 2-channel monaural by setting "EXT CH Select" of "Audio Input" *(page 117)* of the AUDIO SET menu to "CH-1," set the LINE/MIC/MIC+48V switch for CH-2 to the same position as that for CH-1. However, if a microphone which supports both stereo and monaural modes is connected and power of +48 V is supplied to CH-2, the microphone is not switched to monaural mode, but the directivity goes the left channel side. For such a microphone, set the LINE/MIC/MIC+48V

switch for CH-1 to MIC+48V and that for CH-2 to MIC.

Sony-made microphones which support both stereo and monaural modes

- Microphone supplied with this camcorder
- ECM-680S

Using External Inputs or Optional Microphones

Connect external audio sources or external microphones to the AUDIO IN connectors CH-1 and CH-2, then set the LINE/MIC/MIC+48V switches CH-1 and CH-2 to the appropriate position.

LINE: For audio a audio line source (Line level: +4 dBu)

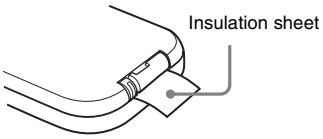
MIC: For a microphone that requires no power supply

MIC+48V: For a microphone that requires +48V power supply

Using the IR Remote Commander

Before use

Before you use the supplied IR Remote Commander for the first time, pull out the insulation sheet from the battery holder.



A CR2025 lithium battery is set in the holder at the factory.

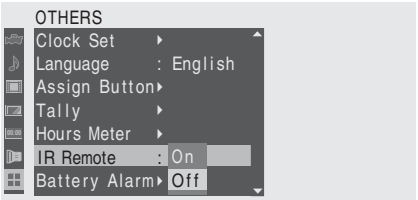
To use the IR Remote Commander

For controlling the camcorder from the IR Remote Commander, activate the remote control function of the camcorder after turning the power on.

Activating/deactivating the remote control function can be achieved using the Setup menu or an assignable button.

To activate using the menu

Press the MENU button to set the camcorder to Menu mode, select (the OTHERS menu) and set “IR Remote” to “On.”



For details on menu operations, see “Basic Menu Operations” on page 110.

To activate using an assignable button

Assigning “IR Remote” to one of the assignable buttons permits you to activate/deactivate the remote control function by pressing the button.

For the assignable buttons, see “Changing Functions of the Assignable Buttons” on page 64.

Note

To avoid malfunctions, the remote control function is automatically deactivated when the camcorder is turned off. Activate the function each time when required after you turn the camcorder on.

Battery lifetime

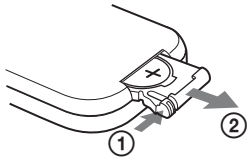
When the lithium battery's power falls, the IR Remote Commander may not work even if you press the buttons. The average lithium battery's service life is about one year, but this depends on the pattern of use.

If pressing the remote control buttons produces absolutely no effect on the camcorder, replace the battery then check the operation again.

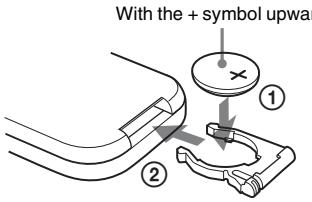
Replacing the battery in the IR Remote Commander

Use a commercially available CR2025 lithium battery. Do not use any battery other than a CR2025.

1 Hold down the lock lever ①, pull out the battery holder ②, and remove the battery.



2 Place a new battery in the battery holder with the + symbol facing upward ①, then push the battery holder into the IR Remote Commander until it clicks ②.



WARNING

- Battery may explode if mistreated.
  Do not recharge, disassemble, or dispose of in fire.
- Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

When you dispose of the battery, you must obey the law in the relative area or country.

AVERTISSEMENT

- En cas de mauvaise manipulation de la batterie, risque d'explosion.
  Ne rechargez pas et ne démontez pas la batterie et ne la jetez pas dans le feu.
- N'exposez pas les batteries à une chaleur excessive, au soleil ou près d'un feu par exemple.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.

Lorsque vous mettez la batterie au rebut, vous devez respecter la législation en vigueur dans le pays ou la région où vous vous trouvez.

WARNUNG

- Bei fehlerhafter Handhabung kann der Akku explodieren.
  Akku deshalb nicht aufladen, nicht demontieren und nicht verbrennen.
- Akkus dürfen keinesfalls übermäßiger Wärmeeinwirkung ausgesetzt werden, wie z.B. Sonneneinstrahlung, Feuer o. ä.

VORSICHT

Explosionsgefahr bei Verwendung falscher Batterien. Batterien nur durch den vom Hersteller empfohlenen oder einen gleichwertigen Typ ersetzen.

Wenn Sie die Batterie entsorgen, müssen Sie die Gesetze der jeweiligen Region und des jeweiligen Landes befolgen.

Handling SxS Memory Cards

This camcorder records audio and video on SxS memory cards (optional) inserted in the card slots.

About SxS Memory Cards

Usable SxS memory cards

Use the following Sony-made SxS memory cards (SxS PRO or SxS-1) with this camcorder. Operations are not guaranteed with memory cards other than SxS PRO and SxS-1.

SxS PRO

- SBP-16 (16GB)
- SBP-32 (32GB)

SxS-1

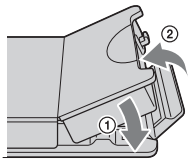
- SBS-32G1A (32GB)
- SBS-64G1A (64GB)

These cards comply with the ExpressCard standard.

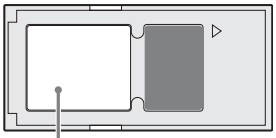
- SxS, SxS PRO and SxS-1 are trademarks of Sony Corporation.
- The ExpressCard word mark and logo are owned by Personal Computer Memory Card International Association (PCMCIA) and are licensed to Sony Corporation. All other trademarks are the property of their respective owners.

Notes on using SxS memory cards

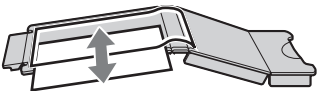
- Recorded data may be damaged or lost in the following situations:
  - —If you remove this media or turn off the power while formatting, reading or writing data.
  - —If you use this media in locations subject to static electricity or electrical noise.
- Do not use or store this media in the following locations:
  - —Where recommended operating conditions are exceeded.
  - —Inside a closed car in summer; or in strong sunshine / under direct sunlight / near a heater, etc.
  - —Humid or corrosive location
- Verify the correct direction of insertion before use.
- When storing or carrying this media, put this media in the carrying case and lock it firmly.



- We recommend that you make a backup copy of important data. Sony accepts no responsibility for any damage or loss of data you recorded.
- Do not apply a label sheet in places other than the label space. When applying the label sheet to this media, do not allow it to protrude from its proper location.

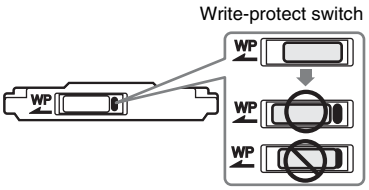


- SxS memory cards to be used with this camcorder must be formatted using the format function of this camcorder. If a card is formatted using other device, it is regarded as of a different format, requiring repeated format operation on this camcorder.
- Deleting with the function of the camcorder does not completely delete data on this media. When transferring or disposing of this media, use a commercial data deleting software or destroy the actual body at you own responsibility.
- If the available recording time on a card is short, clip operation may be restricted. In such a case, delete unnecessary files by using a PC.
- Remove or reinsert the case card with the case opened properly.



For write protection

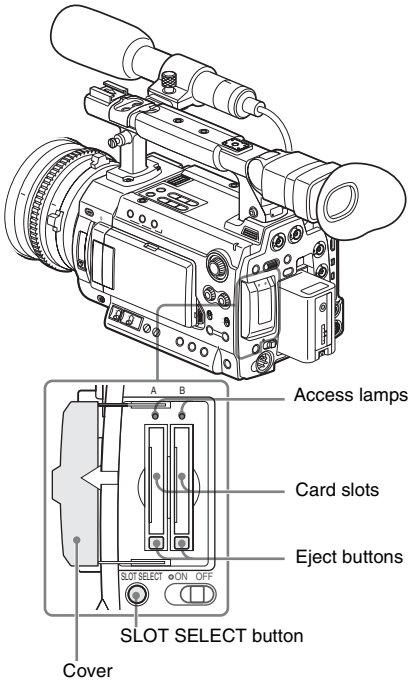
Setting the write-protect switch of the SxS memory card to “WP” disables you to record, edit or delete data.



Note

Do not operate the write-protect switch of an SxS memory card while it is set in the camcorder. Temporarily remove the card from the camcorder before changing the switch setting.

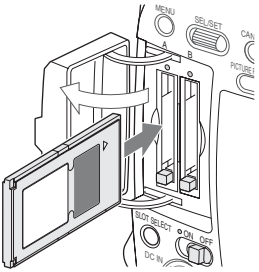
Inserting/Removing an SxS Memory Card



Inserting an SxS memory card

1 Open the cover.

2 Insert the SxS memory card into the slot.



With the label facing right

The access lamp lights in red then changes to green once the memory card is ready for use.

3 Close the cover.

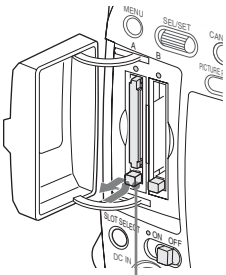
Status indications by the access lamps

Card slots A and B are accompanied by the respective access lamps to indicate their statuses.

Lamp	Slot statuses
Lights in red	Accessing the loaded SxS memory card (writing/reading data)
Lights in green	Standby (ready for recording or playback using the loaded SxS memory card)
Off	• No SxS memory card is loaded. • The loaded card is invalid. • An SxS memory card is loaded, but another slot is active.

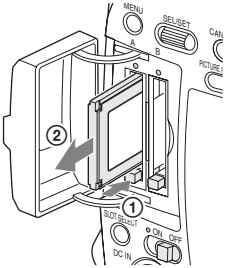
Removing an SxS memory card

1 Open the cover, once press the eject button to release the lock, then pull the button out.



Press and unlock the button.

2 Press the eject button again to remove the card.



Notes

- Data are not guaranteed if the power is turned off or a memory card is removed while the card is being accessed. All data on the card may be destroyed. Be sure that the access lamps are lit in green or off when you turn off the power or remove memory cards.
- Fully insert the memory card in the card slot. If it is inserted halfway, the eject button may not function properly.

Switching Between SxS Memory Cards

When SxS memory cards are loaded in both card slots A and B, press the SLOT SELECT button to select the card you wish to use.
If a card becomes full during recording, switching to the other card is automatically executed.

Note

The SLOT SELECT button is disabled while playback is in progress. Switching is not executed even if you press the button. The button is enabled on the thumbnail screen *(page 88)*.

Formatting an SxS Memory Card

Formatting may be required before using an SxS memory card with this camcorder. For an SxS memory card that is not formatted or that was formatted with another system, the message "Unsupported File System" is displayed on the LCD monitor/viewfinder screen.
Format the card as instructed below.

Note on formatting

Any SxS memory card formatted with a device other than this camcorder cannot be used with the camcorder.

To execute formatting

Using "Format Media" *(page 133)* of the OTHERS menu, specify "Media(A)" (slot A) or "Media(B)" (slot B) then select "Execute." On a confirmation message, select "Execute" again.

Formatting begins.
The in-progress message and status bar (%) are displayed, and the access lamp lights in red.
When formatting is completed, the completion message is displayed for three seconds.

Recording/playback during formatting

You can perform recording or playback using the SxS memory card in the other card slot while formatting is in progress.

If formatting fails

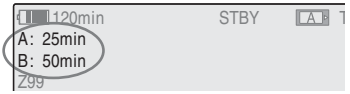
A write-protected SxS memory card or memory card that cannot be used with this camcorder will not be formatted.
As a warning message is displayed, replace the card with an appropriate SxS memory card, as per the instructions in the message.

Notes

- All the data, including recorded pictures and setup files, are erased when a memory card is formatted.
- SxS memory cards to be used with this camcorder must be formatted using the format function of this camcorder. Any card formatted with other device must be formatted again with this camcorder.

Checking the Remaining Time Available for Recording

In E-E Display/Recording mode, you can check the time remaining for the SxS memory cards loaded in the card slots on the LCD monitor/viewfinder screen.



The available time for recording with the current video format (recording bit rate) is calculated according to the remaining space of each card and displayed in time units of minutes.
The remaining can also be checked in a meter format on the BATTERY/MEDIA status screen *(page 108)*.

Note

A icon appears if the memory card is write-protected.

Replacing an SxS memory card

- If the available time on two cards in total becomes less than 5 minutes, a message "Media Near Full," flashing of the tally lamps, and a beep sound will warn you. Replace the cards with those with sufficient space.
- If you continue recording until the total remaining time reaches zero, the message changes to "Media Full," and recording stops.

Note

Approximately 600 clips can be recorded on one SxS memory card at maximum.
If the number of recorded clips reaches the limit, the remaining time indication becomes "0," and the message "Media Full" is displayed.

Restoring an SxS Memory Card

If an error occurs with data in a memory card for some reason, the card must be restored.
If an SxS memory card that needs to be restored is loaded, a message that prompts you to execute a restore operation is displayed on the LCD monitor/viewfinder screen.

To restore a card

Select "Execute" by turning the jog dial then press the dial.

The restore operation begins.
During restoration, the in-progress message and status bar (%) are displayed, and the access lamp is lit in red.

When restoration is completed, the completion message is displayed for three seconds.

If restoration fails

- A write-protected SxS memory card or one on which an error occurred cannot be restored. For such a card, a warning message is displayed. Release the write protection or replace the card, as per the instructions in the message.
- An SxS memory card on which an error occurred may become usable again through repeated formatting.
- In some cases, only parts of clips cannot be restored. Playback of the restored clips becomes possible again.
- The following operation may restore an SxS memory card for which the message "Could not Restore Some Clips" is repeatedly displayed each time you try the restoration process:

  1 Copy necessary clips to another SxS memory card, using the copy function *(page 98)* of the camcorder or the dedicated application software (supplied) *(page 140)*.

  2 Format the problem SxS memory card, using the format function of this camcorder.

  3 Return the necessary clips to the SxS memory card by copy operation.

Recording/playback during restoration

You can perform recording or playback using the SxS memory card in the other card slot while restoration is in progress.

Note

For restoration of media recorded with this unit, be sure to use this unit. Media recorded with a device other than this unit or with another unit of different version (even of the same model) may not be restored using this unit.

Basic Operation Procedure

Basic recording can be performed with the following procedures:

Preparations

1 Mount a fully charged battery pack.

2 Load SxS memory card(s).

If you load two cards, recording is continued by automatically switching to the second card when the first card becomes full.

3 Adjust the angle of the LCD monitor for the best view.

When you wish to use the viewfinder, fold the LCD monitor to its park position and adjust the angle of the viewfinder.

4 Set the power switch to ON.

The camcorder is turned on.

When using the Remote Commander, activate the remote control mode *(page 35)*.

Note

When you hold the camcorder by the grip, support it from underneath with your left hand.

Recording

5 Adjust the iris, gain, electric shutter, and white balance, as required.

See "Adjusting the Iris" on page 53, "Setting the Gain" on page 50, "Setting the Electronic Shutter" on page 51, "Adjusting the White Balance" on page 46.

6 Focus on the subject.

7 Press the REC START/STOP button on the handle or the grip.

(If you are using the IR Remote Commander, press the REC button simultaneously with the unmarked button.)

The front and rear tally lamps light and recording begins.

8 To stop recording, press the REC START/STOP button again.

(If you are using the IR Remote Commander, press the REC PAUSE button simultaneously with the unmarked button.)

Recording stops and the camcorder enters STBY (recording standby) mode.

Note

If you press the REC START/STOP button to start next recording while previous data writing is not completed, the message "Cannot Proceed" may be displayed and recording may not start.

To record external input signals

Changing the "Input Source Select" setting of the VIDEO SET menu from "Camera" (factory setting) to "i.LINK" enables recording of an HDV stream fed via the i.LINK (HDV/DV) connector.

For details, see "Recording External Input Signals" on page 142.

To prevent a switching error

The REC START/STOP button on the handle is incorporated with a protective cover. If the REC START/STOP button on the handle will not be used, it is recommended to cover the button.

Checking the last recorded clip (Rec Review)

9 Press the REC REVIEW button.

The Rec Review function *(page 63)* is activated, and the last recorded clip is played back for the specified time on the LCD monitor/viewfinder screen.

When playback reaches the end of the clip, the camcorder returns to STBY (recording standby) mode.

To delete clips

You can delete the last recorded clip by using the Last Clip DEL function.

See "Deleting the Last Recorded Clip" on page 82.

Use the All Clips DEL function when you wish to delete all recorded clips from a memory card.

See“Deleting Clips Collectively” on page 82.

To specify a clip to be deleted, use the thumbnail screen.

See“Deleting Clips” on page 99.

Clip (recording data)
When you stop recording, video, audio and subsidiary data from the start to end of the recording are recorded as a single clip on an SxS memory card.

Clip name
For each clip recorded with this camcorder, a clip name is automatically generated according to the method selected with “Auto Naming” *(page 130)* under “Clip” of the OTHERS menu. The default setting of “Auto Naming” is “Plan,” with which a clip name defined in planning metadata is applied.
Change the “Auto Naming” setting to “Title” to apply a clip name composed of 4 to 46 alphanumerics and 4 numerics.

Example: ABCD0001

The block of 4 to 46 alphanumerics can be specified as desired using “Clip” of the OTHERS menu before you start recording. (It cannot be changed after recording.)
The value of the 4 numerics is automatically counted up in sequence.

Notes on Clips
The XDCAM EX-series products limit the maximum file size of an HD clip to 4GB and that of an SD clip to 2GB. If you continue recording for an extended period, recorded materials may be segmented into multiple files, depending on the file size (the maximum number of partitions is 99). The camcorder regards continuous recording as one clip even if it has been segmented into multiple files.
A long clip can be recorded crossing over two memory cards in slot A and B.
When you copy clips to a hard disk drive, etc. using a computer, it is recommended to use the dedicated application software on the supplied CD-ROM.

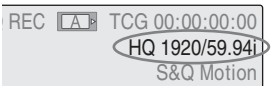
Note

If copying is done using Explorer (Windows) or Finder (MAC), the continuity and relationships of recorded materials may not be maintained.

Maximum duration of a clip
In HD mode, a clip can be 24 hours long at maximum. If a clip exceeds 24 hours, it is automatically divided.

Selecting the Video Format

You can select various video formats for recording/playback using “System” of the OTHERS menu.
The current format is displayed on the screen when you press the DISPLAY/BATT INFO button.



Selectable Formats

The selectable formats vary depending on HD/SD setting and the area of use (NTSC or PAL).

Selection of the area of use is achieved on the Initial Setting display (page 26) or using “System” (page 129) of the OTHERS menu.

HD mode

When the camcorder is set to HD mode, the video formats set on this camcorder cover the recording bit rate (HQ/SP), recording picture size (horizontal resolution), recording frame rate, and recording scan system (i/P).

When you select an HQ format, recording is made with the bit rate of 35 Mbps VBR.
When you select an SP format, recording is made with the HDV-compatible bit rate of 25 Mbps CBR.

With “NTSC Area” or “NTSC(J) Area” selected

Format	Indication on this camcorder
HQ 1920 × 1080 59.94 interlace	HQ 1920/59.94i
HQ 1440 × 1080 59.94 interlace	HQ 1440/59.94i
SP 1440 × 1080 59.94 interlace	SP 1440/59.94i
HQ 1920 × 1080 29.97 Progressive	HQ 1920/29.97P
HQ 1440 × 1080 29.97 Progressive	HQ 1440/29.97P
HQ 1920 × 1080 23.98 Progressive	HQ 1920/23.98P
HQ 1440 × 1080 23.98 Progressive	HQ 1440/23.98P
SP 1440 × 1080 23.98 Progressive	SP 1440/23.98P
HQ 1280 × 720 59.94 Progressive	HQ 1280/59.94i
HQ 1280 × 720 29.97 Progressive	HQ 1280/29.97P
HQ 1280 × 720 23.98 Progressive	HQ 1280/23.98P

With “PAL Area” selected

Format	Indication on this camcorder
HQ 1920 × 1080 50 interlace	HQ 1920/50i
HQ 1440 × 1080 50 interlace	HQ 1440/50i
SP 1440 × 1080 50 interlace	SP 1440/50i
HQ 1920 × 1080 25 Progressive	HQ 1920/25P
HQ 1440 × 1080 25 Progressive	HQ 1440/25P
HQ 1280 × 720 50 Progressive	HQ 1280/50P
HQ 1280 × 720 25 Progressive	HQ 1280/25P

SD mode (DVCAM mode)

When the camcorder is set to SD mode, the video formats set on this camcorder cover the recording frame rate, recording scan system (i/P), and aspect (SQ/EC).
When you select SD mode, recording is made with the bit rate of 25 Mbps CBR.

With “NTSC Area” or “NTSC(J) Area” selected

Format	Indication on this camcorder
720 × 480 59.94 interlace, squeeze	DVCAM59.94i SQ
720 × 480 59.94 interlace, edge crop	DVCAM59.94i EC
720 × 480 29.97 Progressive, squeeze	DVCAM29.97P SQ
720 × 480 29.97 Progressive, edge crop	DVCAM29.97P EC

With "PAL Area" selected

Format	Indication on this camcorder
720 × 576 50 interlace, squeeze	DVCAM50i SQ
720 × 576 50 interlace, edge crop	DVCAM50i EC
720 × 576 25 Progressive, squeeze	DVCAM25P SQ
720 × 576 25 Progressive, edge crop	DVCAM25P EC

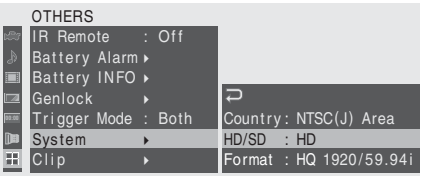
Switching between HD and SD

For HD/SD switching use "HD/SD" under "System" of the OTHERS menu.
When you change the menu setting, the camcorder automatically restarts, executing the switching.

Note

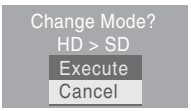
HD/SD switching is disabled during recording and playback.

1 Press the MENU button to set the camcorder to Menu mode, display the OTHERS menu with , and select "HD/SD" from "System."



2 Select the desired mode.

A confirmation message is displayed.



3 Select "Execute."

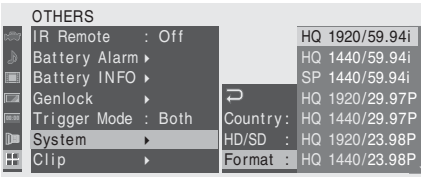
The camcorder is automatically turned off, then is restarted, activating the menu setting.

For details on menu operations, see "Basic Menu Operations" on page 110.

For the menu items "Format" of "System" of the OTHERS menu and "SDI/HDMI/i.LINK I/O Select" of the VIDEO SET menu the settings for HD mode and those for SD mode are independently stored in memory. When you switch between HD and SD, these items are automatically changed to the conditions corresponding to the selected mode.

Changing the Format

Press the MENU button to set the camcorder to Menu mode, display the OTHERS menu with , and select "Format" from "System."



For details on menu operations, see "Basic Menu Operations" on page 110.

Signals from the SDI OUT, VIDEO OUT, and HDMI OUT connectors are also output according to the format selected with this menu.

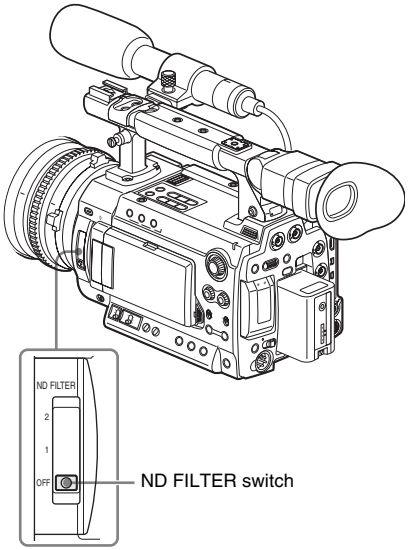
For details on the output formats, refer to the Supplement in the supplied CD-ROM labeled "Manuals for Solid-State Memory Camcorder."

Note on recording format in SP 1440/23.98P mode

When recording in SP 1440 × 1080 mode at 23.98P in Progressive mode (indicated as SP 1440/23.98P on this camcorder), pictures are recorded at 59.94 in Interlace mode (indicated as SP 1440/59.94i) by pull-down processing.

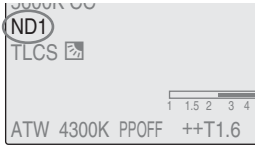
Switching the ND Filters

ND filters are available for keeping the aperture in a proper range.
Set the ND FILTER switch according to the brightness of the subject.



2: $^1/_{64}$ND
1: $^1/_8$ND
OFF: Clear

The ND filter number is displayed on the screen when you press the DISPLAY/BATT INFO button.

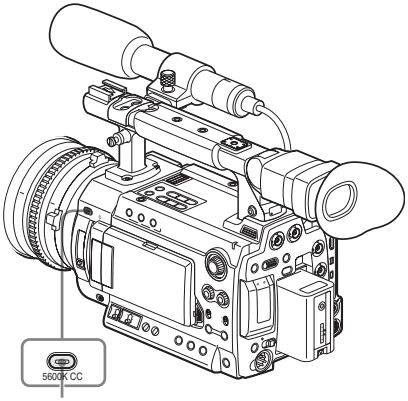


Note

No indication is obtained if the ND FILTER switch is set to OFF.

Using the 5600K CC Filter

When you press the 5600K CC button, the indicator lights and the 5600K CC (electric color compensation) filter is activated.



5600K CC button with indicator

The “5600K CC” indication is displayed on the screen when you press the DISPLAY/BATT INFO button.

Note

The 5600K CC On/Off setting cannot be changed while auto white-balance adjustment or auto black-balance adjustment is in progress or when the white-balance adjustment is set to ATW mode.

Adjusting the White Balance

The white balance must be adjusted to suit to the color temperature of the light source.
You can select the adjustment mode according to the shooting conditions.

Preset mode

The color temperature is adjusted to the preset value (factory setting: 3200K) in this mode. Select this mode when there is no time to adjust the white balance or when you wish to fix the white balance to the condition of you set for a Picture Profile.

Memory A mode, Memory B mode

- The white balance is adjusted to the value stored in memory A or memory B.
- Pressing the AUTO WHT BAL button executes auto white balance and stores the adjusted value in memory A or memory B.

ATW (Auto-Tracing White balance) mode

In this mode, the camcorder automatically adjusts the white balance to the appropriate condition. When the color temperature of the light source changes, the white balance adjustment is automatically executed.
Five steps of adjustment speed can be selected with "ATW Speed" *(page 115)* of the CAMERA SET menu.

Holding the ATW value

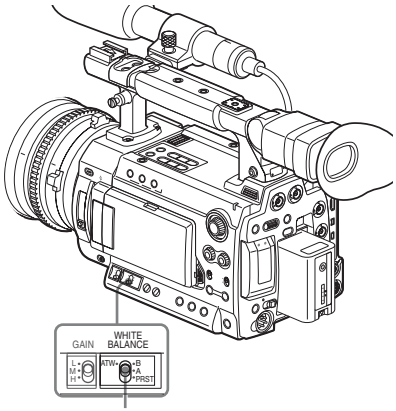
When the ATW Hold function is assigned to an assignable button, you can momentarily hold the ATW value to fix the white balance, even in ATW mode, by pressing the button.

For details on the assignable buttons, see "Changing Functions of the Assignable Buttons" on page 64.

Selecting the Adjustment Mode

You can select Preset mode, Memory A mode, or ATW (Memory B) mode with the WHITE BALANCE switch.

To the B position of the WHITE BALANCE switch, ATW mode is assigned at the factory. The setting can be changed with "White Switch <B>" *(page 115)* of the CAMERA SET menu to select Memory B mode.



WHITE BALANCE switch

B: ATW or Memory B mode
A: Memory A mode
PRST: Preset mode

Assigning the ATW on/off function to an assignable button permits you to independently activate/deactivate ATW.

For details on the assignable buttons, see "Changing Functions of the Assignable Buttons" on page 64.

When you press the DISPLAY/BATT INFO button, the current adjustment mode and color temperature are displayed on the screen.

ATW: ATW mode
W:A: Memory A mode
W:B: Memory B mode
W:P: Preset mode

Executing Auto White Balance

Execute auto white-balance adjustment according to the color temperature of the light source.
The adjustment value can be stored in memory A or B.

Note

Auto white-balance adjustment cannot be executed in Preset mode.

1 To store the adjustment value in memory, select Memory A or Memory B mode.

2 Select the appropriate ND filter according to the lighting condition.

3 Place a white subject under the same lighting condition and shoot it so that a white area is obtained on the screen.

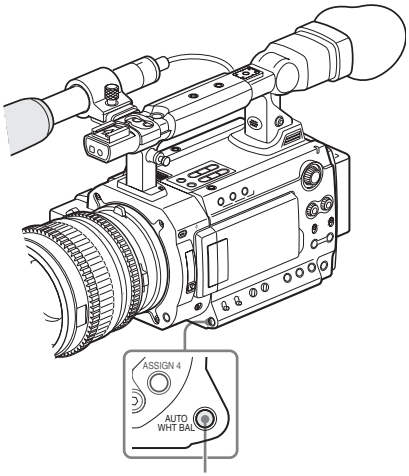
A white object (white cloth, a white wall, etc.) near the subject may be used in place. Be careful not to have any spots of high illumination on the screen.

4 Adjust the lens iris opening.

Set it to the proper condition if the manual iris adjustment mode is selected.

5 Press the AUTO WHT BAL button.

Auto white-balance adjustment begins.



AUTO WHT BAL button

During adjustment, an in-progress message is displayed on the screen. When the adjustment is completed successfully, the message changes to a completion message, and the obtained color temperature is displayed.

- When you execute the adjustment in a memory mode, the adjusted value is stored in memory (A or B) selected in step **1**.
- When you execute the adjustment in ATW mode, adjustment in ATW is resumed.

If auto white-balance adjustment fails

An error message is displayed on the screen for approximately three seconds.
If the error message is displayed, try auto white-balance adjustment again.
If the error message continues to be displayed after several attempts, consult your Sony service representative.

Adjusting the Black Balance

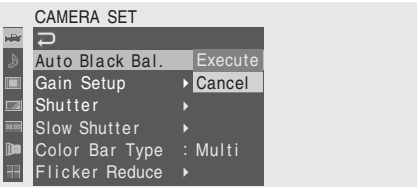
With this camcorder, you can adjust the black balance using the menu.
Use the CAMERA SET menu for the adjustment.

For details on menu operations, see "Basic Menu Operations" on page 110.

1 Close the iris.

When using a lens on which the iris can be closed, such as the lens supplied with the PMW-F3K, close the iris.
If a lens on which the iris cannot be completely closed is used, cover the lens entirely with the lens cap or equivalent.

2 Press the MENU button to set the camcorder to Menu mode, display the CAMERA SET menu with , and select "Auto Black Bal." from the menu.



3 Select "Execute" to start the black balance adjustment.

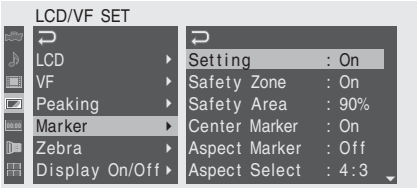
During adjustment, an in-progress message is displayed. When the adjustment is completed successfully, the message changes to a completion message.

Displaying the Markers and Zebra Patterns

During recording, various markers and zebra patterns can be inserted into the image on the LCD monitor/viewfinder screen.
This does not affect recording signals.

Displaying the Markers

Use "Marker" of the LCD/VF SET menu.
Press the MENU button to set the camcorder to Menu mode, display the LCD/VF SET menu with , and select "Marker" from the menu.



Activating the marker indications

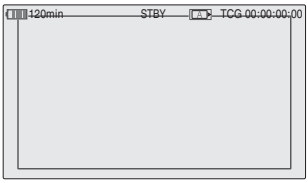
- Set "Setting" to "On" then turn the markers on/off independently.
  No marker is displayed when "Setting" is "Off."
- Assigning the Marker on/off function to one of the assignable buttons permits you to operate "Setting: On/Off" by pressing the button.

For the assignable buttons, see "Changing Functions of the Assignable Buttons" on page 64.

Displaying the safety-zone marker

Set "Safety Zone" to "On" to insert the safety-zone marker to the screen.
With "Safety Area" you can select the size of the safety-zone marker from among 80%, 90%, 92.5%, and 95% of the picture area.

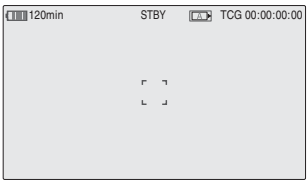
Example: 95%



When the aspect marker is on, the safety zone marker shows the effective area within the aspect marker.

Displaying the center marker

Set “Center Marker” to “On” to insert the center marker into the screen area.



Displaying the aspect marker

Set “Aspect Marker” to “Line” or “Mask” to insert the aspect marker into the screen area.
Line: To show as white lines
Mask: To display by lowering the video signal level of areas outside the marker range

You can select the ratio of the aspect marker from among 4:3, 13:9, 14:9, 15:9, 1.66:1, 1.85:1, 2.35:1, and 2.4:1 with “Aspect Select.”

Example: 4:3

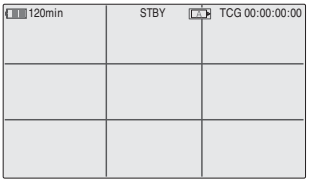
When you set “Aspect Marker” to “Mask,” you can also change the brightness of images outside the aspect marker with “Aspect Mask.” It can be selected in the range of 0% to 90% (10% steps).

Note

No aspect marker is displayed when a video format of EC (Edge Crop) is selected in SD mode.

Displaying the guide frame lines

Set “Guide Frame” to “On” to insert the guide frame lines into the screen area.



Displaying the Zebra Patterns

A zebra pattern(s) can be inserted to the picture on the LCD monitor/viewfinder screen to check the appropriate luminance level.

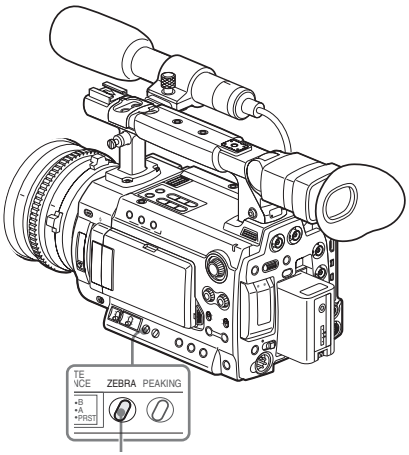
Factory-set zebras

1 (70%)

2 (100%)

Turning the zebra-pattern indication on/off

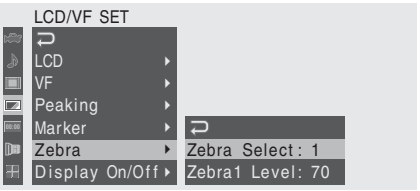
Pressing the ZEBRA button turns the zebra-pattern indication on/off.



ZEBRA button

Changing the zebra pattern

Using “Zebra” of the LCD/VF SET menu, you can change the zebra pattern to be displayed. Press the MENU button to set the camcorder to Menu mode, display the LCD/VF SET menu with , and select “Zebra” from the menu.



Zebra Select

Select the zebra pattern(s) to be displayed.

1 (Zebra1): To display a zebra pattern in the area of ±10% centering the video level set with “Zebra1 Level.”

2 (Zebra2): To display a zebra pattern for the video level over 100%.

Both: To display both Zebra1 and Zebra2.

Zebra1 Level

Set the center level of Zebra1 in the range of 50 to 107%. The default setting is 70%.

Setting the Gain

You can set the gain of the video amplifier according to the brightness of the subject. Select the setting mode required by the shooting conditions.

Fixed gain mode (manual gain adjustment)

Select the gain of the video amplifier, using the switch or a menu operation.

AGC mode (automatic gain control)

The gain of the video amplifier is automatically adjusted according to the picture brightness.

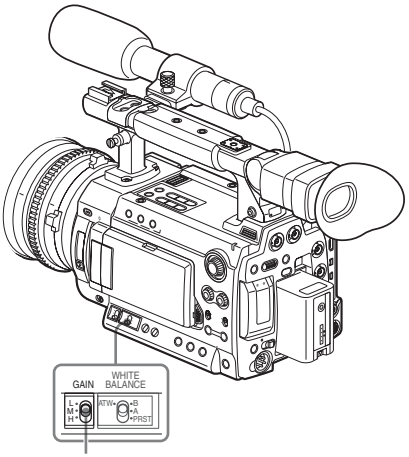
Recording With Fixed Gain

Selecting the gain with the switch

Select the gain, using the GAIN switch.

Note

When AGC mode is on, the fixed gain cannot be selected.



GAIN switch

The gain value at each of the switch positions are set at the factory are as follows:

L: 0 dB
M: 6 dB
H: 12 dB
These values can be changed in the range of –3 dB to +18 dB, using the CAMERA SET menu.

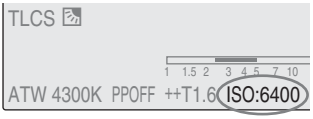
To change

Press the MENU button to set the camcorder to Menu mode, display the CAMERA SET menu with , and select “Gain Setup” from the menu.

For details on menu operations, see “Basic Menu Operations” on page 110.

When you press the DISPLAY/BATT INFO button, the current gain value is displayed on the screen.

The indication in dB can be changed to that in an ISO value by changing the “Gain Setting” of “Display On/Off” *(page 122)* of the LCD/VF SET menu.



Recording in AGC Mode

You can turn AGC mode on by setting “AGC” to “On” with “TLCS” *(page 115)* of the CAMERA SET menu.

Setting the Electronic Shutter

The electronic shutter of the camcorder permits you to change the shutter speed (the accumulation time per recording frame).
The electronic shutter can be adjusted automatically or manually as required.

Auto Shutter mode

The shutter speed is automatically adjusted according to the picture brightness.

Fixed Shutter (manual adjustment) modes

Recording is made with a specified shutter speed (accumulation time).

Standard modes (Speed mode/Angle mode)

These modes may be especially effective when you wish to record a quick-moving subject with little blurring.
You can select Speed mode or Angle mode. In Angle mode, you can specify the shutter speed by setting the shutter angle.

ECS (Extended Clear Scan) mode

Specify the shutter speed by frequency. This mode may be used to shoot the monitor screen eliminating horizontal bands.

Slow Shutter mode

The shutter speed is specified in the number of accumulated frames.

Shooting in Auto Shutter Mode

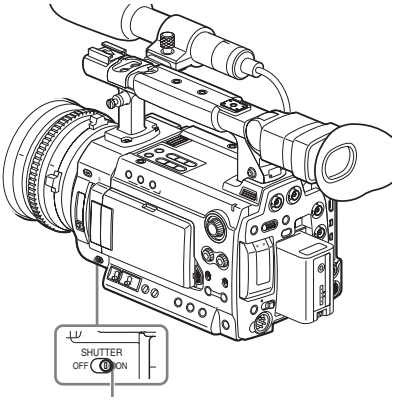
You can turn Auto Shutter mode on by setting “Auto Shutter” to “On” with “TLCS” *(page 115)* of the CAMERA SET menu.

Shooting in a Fixed Shutter Mode

When you set the SHUTTER switch to ON, the fixed shutter is turned on in the mode and with the shutter speed you specified with “Shutter” of the CAMERA SET menu.

Note

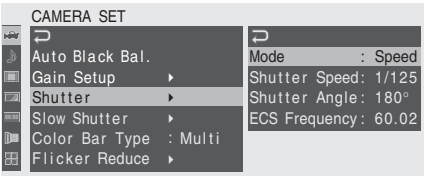
When Auto Shutter mode is On, the fixed shutter cannot be selected.



SHUTTER switch

Setting the shutter mode and speed

The shutter mode and shutter speed can be set with the CAMERA SET menu.
Press the MENU button to set the camcorder to Menu mode, display the CAMERA SET menu with , and select “Shutter.”



Speed (standard speed) mode

Set “Mode” to “Speed,” and specify the time ([1/setting value] sec.) with “Shutter Speed.”
The available setting values vary depending on the current frame rate.

Frame rate	Shutter speed (sec.)
59.94i, 59.94P 50i, 50P	$^{1}/_{60}$, $^{1}/_{100}$, $^{1}/_{120}$, $^{1}/_{125}$, $^{1}/_{250}$, $^{1}/_{500}$, $^{1}/_{1000}$, $^{1}/_{2000}$
23.98P	$^{1}/_{32}$, $^{1}/_{48}$, $^{1}/_{50}$, $^{1}/_{60}$, $^{1}/_{96}$, $^{1}/_{100}$, $^{1}/_{120}$, $^{1}/_{125}$, $^{1}/_{250}$, $^{1}/_{500}$, $^{1}/_{1000}$, $^{1}/_{2000}$
25P	$^{1}/_{33}$, $^{1}/_{50}$, $^{1}/_{60}$, $^{1}/_{100}$, $^{1}/_{120}$, $^{1}/_{125}$, $^{1}/_{250}$, $^{1}/_{500}$, $^{1}/_{1000}$, $^{1}/_{2000}$
29.97P	$^{1}/_{40}$, $^{1}/_{50}$, $^{1}/_{60}$, $^{1}/_{100}$, $^{1}/_{120}$, $^{1}/_{125}$, $^{1}/_{250}$, $^{1}/_{500}$, $^{1}/_{1000}$, $^{1}/_{2000}$

Angle (standard angle) mode

Set “Mode” to “Angle,” and specify the shutter angle with “Shutter Angle.”
You can select from among 11.25º, 22.5º, 45º, 72º, 86.4º, 90º, 144º, 150º, 172.8º, 180º, and 216.0º.

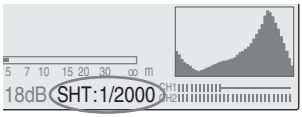
Note

When the frame rate is set to a value in the range of 1 to 16 in Slow & Quick Motion mode, you cannot select 72º, 86.4º, 144º, 150º, 172.8º, or 216.0º.

ECS (Extended Clear Scan) mode

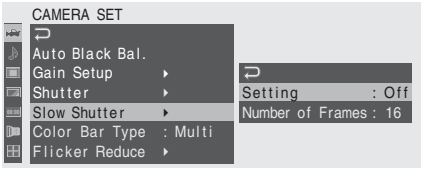
Set “Mode” to “ECS,” and specify the frequency with “ECS Frequency.”
The available setting values vary depending on the current frame rate.

When you press the DISPLAY/BATT INFO button, the current shutter mode and the set value are displayed.



Shooting in Slow Shutter Mode

Select “Slow Shutter” from the CAMERA SET menu.



Set “Setting” to “On,” and specify the number of accumulated frames with “Number of Frames.”
You can select in the range of 2 to 8 frames.

Notes

- Slow Shutter cannot be used when the video format is SP 1440/23.98P, the camcorder is in Slow & Quick Motion mode, or “Auto Shutter” is “On.”
- When a format of the interlace system is selected, the Slow Shutter On/Off setting cannot be changed in the following conditions:
  —Recording is in progress.
  —Cache Rec is On.
  —A setting which includes “HDV” or “DVCAM” is selected with “SDI/HDMI/i.LINK I/O Select” of the VIDEO SET menu.

Adjusting the Iris

Adjust the iris opening using the iris ring of the lens according to the brightness of the subject.

For operations of the lens, refer to the operation guide of the lens.

For lens which supports the iris position indication, the current setting is displayed on the screen when you press the DISPLAY/BATT INFO button.

When the “TLCS” (total level control) setting of the CAMERA SET menu has been changed, the current setting is indicated with a symbol before the iris value.
++: Approx. one stop further open
+: Approx. half a stop further open
No symbol: Standard
–: Approx. half a stop further closed
––: Approx. one stop further closed

For details on TLCS, see “TLCS” (page 115) in “Setup Menu List.”

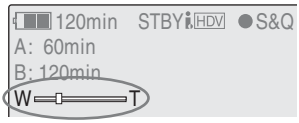
Adjusting the Zoom

When using a zoom lens, rotate the zoom ring of the lens to adjust the zoom.

For operations of the lens, refer to the operation guide of the lens.

For a lens which supports the zoom position indication, the current zoom position is displayed on the screen in the range of 0 (Wide) to 99 (Tele) when you press the DISPLAY/BATT INFO button.

The numerical indication can be changed to that in a bar by changing the “Zoom Position” setting of “Display On/Off” *(page 122)* of the LCD/VF SET menu.



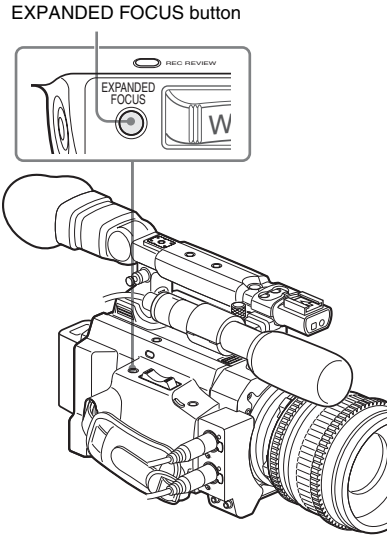
Adjusting the Focus

Rotate the focus ring of the lens for the best focus while observing the picture on the LCD monitor/ viewfinder screen.

For operations of the lens, refer to the operation guide of the lens.

Expanded Focus

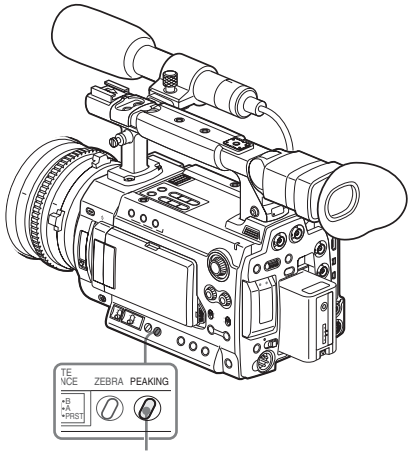
When you press the EXPANDED FOCUS button, the center area of the picture is magnified on the LCD monitor/viewfinder screen, making the focus adjustment easier.
Press the EXPANDED FOCUS button again or leave the focus ring unmoved for 5 seconds to resume the normal angle for recording.



Peaking

When you press the PEAKING button, the peaking function is activated. This function emphasizes the contours of the images on the LCD monitor/viewfinder screen, making manual focusing easier.
This function does not affect recording signals.

The emphasis level and color of the contours can be set with “Peaking” *(page 121)* of the LCD/VF SET menu.



PEAKING button

Reducing Flickers

To reduce flickers, try either of the following two methods:

Setting the shutter speed according to the power-supply frequency

Activate the electronic shutter *(page 51)* and set the shutter speed according to the power supply frequency.

When the frequency is 50 Hz

Set the shutter speed to $^1/_{50}$ or $^1/_{100}$ seconds.

When the frequency is 60 Hz

Set the shutter speed to $^1/_{60}$ or $^1/_{120}$ seconds.

Using the Flicker-Reduction function

Set “Mode” of “Flicker Reduce” *(page 114)* of the CAMERA SET menu to “Auto” or “On” and set “Frequency” to the power-supply frequency (50 Hz or 60 Hz).

Note

If the frame rate selected for recording is close to the power-supply frequency, flicker may not be reduced sufficiently even if you activate the Flicker-Reduction function. In such cases, use the electronic shutter.

Recommended settings for flicker reduction

Frequency

Always set “Frequency” to the power-supply frequency value appropriate for the shooting area.

Mode

- It is recommended to set “Mode” to “Off” when shooting outdoors or under lighting that does not cause flicker. (It can be also “Auto,” but the compensation may not be done properly.)
- It is recommended to set “Mode” to “Auto” when shooting indoors or under various lighting that may cause flicker, such as fluorescent, sodium, or mercury-vapor lamps. (If continuously shooting under lighting that may cause flicker, “Mode” should be set to “On.”)

The recommended “Mode” settings are shown below.

Flicker Reduce/ Mode	Environments	
	Under lighting that may cause flicker	Under lighting that does not cause flicker
Auto	Recommended	Acceptable
On	Acceptable	Not recommended
Off	Not recommended	Recommended

Note

The flicker-reduction function does not operate when signals are being fed from the HD SDI A/B (Dual-Link) connectors.

Setting the Time Data

Time data, such as the timecodes, user bits, and the clock time, are recorded with pictures.

Running Modes of the Timecode

For the timecode, three running modes and Clock mode can be selected.

Rec Run mode

The timecode advances during recording only. The continuity of the timecode is maintained between clips in the sequence of recording as long as the SxS memory card is not changed.
If you remove the memory card and record on another card, the timecode will not continue when you return the first card to the slot again.

Free Run mode

The timecode keeps advancing regardless of recording.

Regen mode

The timecode advances during recording only. When you insert another memory card, the camcorder starts next recording so that the timecode continues to the last recorded timecode on the card.

Clock mode

The current clock time is recorded for the timecode.

Notes

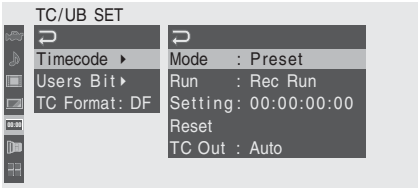
- In Interval Recording, Frame Recording, Slow & Quick Motion Recording, the timecode advances in Rec Run mode regardless of the “Run” setting if you set “Mode” of “Timecode” to “Preset” with the TC/UB SET menu. If you set it to “Clock,” the timecode advances in Regen mode.
- When the Picture Cache function is active (P.Cache Rec Setting: On), the timecode always advances in Free Run mode. When the Picture Cache Rec function is deactivated, the running

mode selected with the TC/UB SET menu is restored.

Setting the Timecode

Specify the timecode to be recorded with “Timecode” and “TC Format” of the TC/UB SET menu.

For details on menu operations, see “Basic Menu Operations” on page 110.



Setting the timecode to a desired value

1 Set “Mode” of “Timecode” to “Preset.”

2 Specify the timecode value on the Setting line and select “SET.”

Resetting the timecode

You can reset the timecode to be recorded in running modes to “00:00:00:00.”

1 Select “Reset” of “Timecode.”

2 Select “Execute.”

Using the actual time as the timecode

Set “Mode” of “Time Code” to “Clock.”

The time of the built-in clock is recorded as the timecode.

Switching between DF and NDF of the timecode

Using “TC Format” of the TC/UB SET menu, DF (drop-frame mode) and NDF (non-drop frame mode) of the timecode can be switched.
Note, however, that the mode is fixed either to DF or NDF regardless of the TC Format setting, depending on the current frame-rate setting.

Restrictions on the timecode

The timecode setting is restricted by the current video format.

Video formats	Frame setting	TC Format
HQ 1920/59.94i HQ 1920/29.97P HQ 1440/59.94i HQ 1440/29.97P SP 1440/59.94i DVCAM59.94i SQ DVCAM59.94i EC DVCAM29.97P SQ DVCAM29.97P EC	00 to 29	DF/NDF switchable (Fixed to DF in Clock mode)
HQ 1920/50i HQ 1920/25P HQ 1440/50i HQ 1440/25P SP 1440/50i DVCAM50i SQ DVCAM50i EC DVCAM25P SQ DVCAM25P EC	00 to 24	Fixed to NDF
HQ 1920/23.98P HQ 1440/23.98P HQ 1280/23.98P	00 to 23 1)	Fixed to NDF 2)
SP 1440/23.98P	00 to 29 3)	DF/NDF switchable (Fixed to DF in Clock mode)
HQ 1280/59.94P	00 to 29 (double count)	DF/NDF switchable (Fixed to DF in Clock mode)
HQ 1280/50P	00 to 24 (double count)	Fixed to NDF
HQ 1280/29.97P	00 to 29	DF/NDF switchable (Fixed to DF in Clock mode)
HQ 1280/25P	00 to 24	Fixed to NDF

1) The frame digits in “Setting” is limited to 00, 04, 08, 12, 16, and 20.
The frame at the beginning of recording is limited to 00, 04, 08, 12, 16, or 20.
As the SDI OUT connector output becomes 60i because of the 2-3 pull-down process except when “23.98P Output” *(page 119)* is set to “23.98PsF” for 1920/23.98P in E-E Display/Recording mode, the frame digits of the timecode added to the SDI OUT connector output are changed to values in the range of 00 to 29.

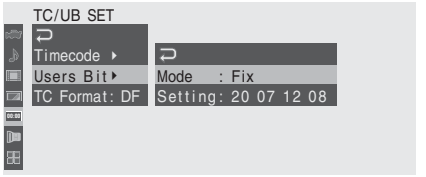
2) Even in Clock mode, the timecode is gradually shifted, because it is counted by NDF.
As any output becomes 2-3 pulled-down video except those from the SDI OUT and HDMI OUT connectors with “23.98P Output” *(page 119)* set to “23.98PsF”

for 1920/23.98P in, there may be a field that has dual timecodes on the display.

3) With DF, the frame digits can be set as desired in the range of 00 to 29.
With NDF, the frame at the beginning of recording is limited to 00, 05, 10, 15, 20, or 25.

Setting the User Bits

You can add a hexadecimal number of 8 digits for pictures as the user bits.
The user bits can also be set to the current date.
Use “Users Bit” of the TC/UB SET menu.



Setting eight digits as desired

1 Set “Mode” of “Users Bit” to “Fix.”

2 Specify the values on the Setting line and select “SET.”

You can set hexadecimal digits A to F with the corresponding alphabetics.

Recording the current date as the user bits

Set “Mode” of “Users Bit” to “Date.”

The current date is displayed on the Setting line.

Displaying the Time Data

In E-E Display/Recording mode, pressing the DISPLAY/BATT INFO button displays the time data on the screen.

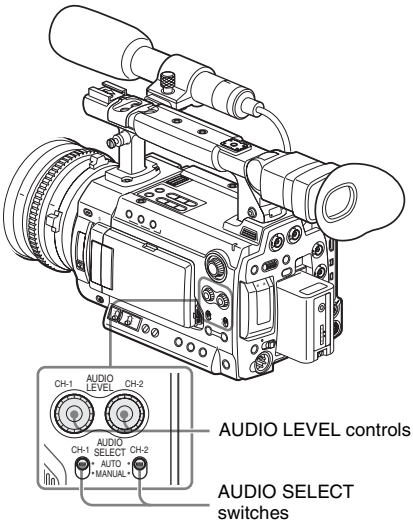
The indication is switched among the timecode, user bits, and recording duration each time you press the TC/U-BIT/DURATION button.

Display	Contents
TCG **:**:**:**	Tmecode
CLK **:**:**:**	Timecode (Clock mode)
UBG ** ** ** **	User bits
DUR **:**:**	Duration from the beginning of recording

Recording Audio Signals

Two channels (CH-1/CH-2) of audio can be recorded (Linear PCM recording) in synchronization with video recording.
Connect the supplied microphone or an external audio source.

For details, see "Attaching the Microphone" on page 34.



Adjusting the Audio Recording Levels

You can select automatic or manual adjustment mode independently for each channel.

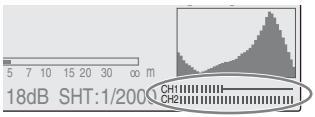
To adjust the levels automatically (AGC)

When the AUDIO SELECT switches CH-1 and CH-2 are set to AUTO, the audio recording levels are automatically adjusted.
Two AGC modes can be selected with "MIC AGC" of "Audio Input" *(page 117)* of the AUDIO SET menu.
High: For general audio recording
Low: For music recording or recording in an event where high sound pressure may be generated

To adjust the levels manually

Set the AUDIO SELECT switches CH-1 and CH-2 to MANUAL and adjust the audio recording levels by turning the AUDIO LEVEL controls. Set the controls to 5 for the reference setting (0 dB). Setting to 10 maximizes the level (+12 dB), and setting to 0 minimizes it (–∞).

The input levels are displayed on the screen when you press the DISPLAY/BATT INFO button.



Fine adjustment of the recording is possible using "TRIM CH-1" and "TRIM CH-2" of "Audio Input" *(page 117)* of the AUDIO SET menu, For high-quality recording, adjust not only the AUDIO LEVEL controls but also "TRIM CH-1" and "TRIM CH-2" so that the optimum microphone sensitivity is obtained. When you perform fine adjustments with "TRIM CH-1" and "TRIM CH-2," set the AUDIO LEVEL controls to 5 and adjust the items so that the appropriate meter indications are obtained.

If the maximum sound pressure cannot be estimated or sudden sound pressure is expected, set "Limiter" of "Audio Input" *(page 117)* of the AUDIO SET menu to "On."

Notes

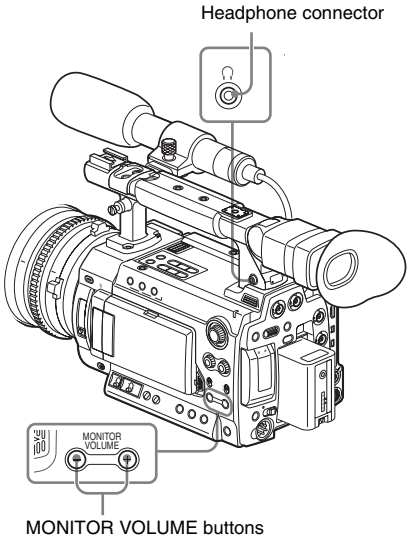
- When you manually adjust the recording levels, check that no distortion is generated, by monitoring through headphones, etc.
- If the AUDIO LEVEL controls are set to a value less than 5, the recording levels will not reach the full scale.

Audio recording in special recording modes

- No audio recording is made in Interval Recording or Frame Recording.
- No audio recording is made in Slow & Quick recording if the recording frame rate is set to a value different from the playback frame rate.

Monitoring the Audio

You can monitor the sounds being recorded with the headphones connected to the headphone connector (stereo mini jack).



Note

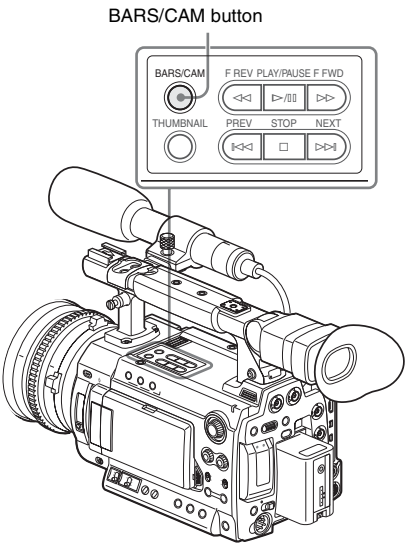
The built-in speaker is disabled in E-E Display/ Recording mode.

To adjust the audio monitoring volume

Use the MONITOR VOLUME buttons.
Pressing the + button increases the volume, and pressing the – button decreases it. To muffle the sound, set it to the minimum level.
While you adjust the volume, the level is displayed as a bar on the screen.

Outputting the Color Bars and Reference Tone

The camcorder can output a color-bar signal in place of the camera picture.
A 1-kHz reference tone is output with the color bar signal if "1kHz Tone" of "Audio Input" *(page 117)* is set to "On" with the AUDIO SET menu.
The color-bar and reference-tone signals are fed out from the HD SDI (A/B), SDI OUT, HDMI OUT, and i.LINK (HDV/DV) connectors. The VIDEO OUT connector outputs the color-bar signal only.



Press the BARS/CAM button.

The camera picture is switched to color bars.
To return to the camera picture, press the button again.

You can select the type of color bars with "Color Bar Type" *(page 113)* of the CAMERA SET menu.
Multi: ARIB multiformat color bars
75%: Vertical stripes of 75% luminance
100%: Vertical stripes of 100% luminance

Notes

- When recording of the camera image is in progress, it cannot be switched to the color-bar picture even if you press the BARS/CAM button. (You can switch the color-bar picture to the camera picture.)
- The color bar mode cannot be selected in Slow & Quick Motion mode.

Recording Shot Marks

When you record shot marks for important scenes of a clip recorded in HD mode as subsidiary data, you can access the marked points easily on a Shot Mark screen, which only displays scenes with shot marks only. This increases editing efficiency.

For the Shot Mark screen, see "Displaying the SHOT MARK Screen (HD Mode Only)" on page 101.

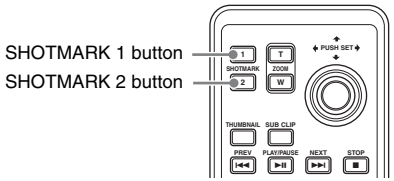
The camcorder permits you to record two types of shot marks: shot mark 1 and shot mark 2.
Shot marks can be recorded as needed during recording or can be added after recording while checking the playback pictures.

Note

Shot marks cannot be recorded for clips recorded in SD mode.

Inserting a shot mark during recording

Activate the IR Remote Commander *(page 35)*, and use the SHOTMARK 1 or 2 button.



Press the SHOTMARK 1 or 2 button where you wish to insert a mark.

If the Shot Mark1 or Shot Mark2 function is assigned to an assignable button, you can also use it instead *(page 64)*.

A shot mark of the type corresponding to the button you press is recorded.

For operations to add shot marks after recording, see "Adding Shot Marks During Playback (HD Mode)" on page 94 and "Adding/Deleting Shot Marks (HD Mode Only)" on page 102.

For specifying a shot mark name using planning metadata, see "Defining Shot Mark Names in Planning Metadata" on page 86.

Adding the OK Mark

By adding the OK mark to a clip recorded in HD mode, you can prevent the clip from being deleted or divided inadvertently.
The OK mark is also used to obtain a thumbnail screen of only the marked clips (OK-Clip thumbnail screen) when you press the THUMBNAIL button.

For the OK-Clip thumbnail screen, see "Displaying the OK-Clip thumbnail screen (HD mode)" on page 91.

Note

The OK mark cannot be added to clips recorded in SD mode.

To add the OK mark in E-E Display mode, assign the OK Mark function to an assignable button.

For function assignment, see "Changing Functions of the Assignable Buttons" on page 64.

Adding the OK mark

In E-E Display mode, you can add the OK mark to the last clip recorded on the SxS memory card currently selected.

When recording of a clip ends, press the assignable button to which you assigned the OK Mark function.

The message "OK Mark" is displayed on the screen for three seconds.

Deleting the OK mark

In E-E Display mode, you can delete the OK mark added to the last clip on the SxS memory card currently selected.

1 **Press the assignable button to which you assigned the OK Mark function.**

The confirmation message "Execute/Cancel" is displayed.

2 **Select "Execute."**

The OK mark of the last clip is deleted.

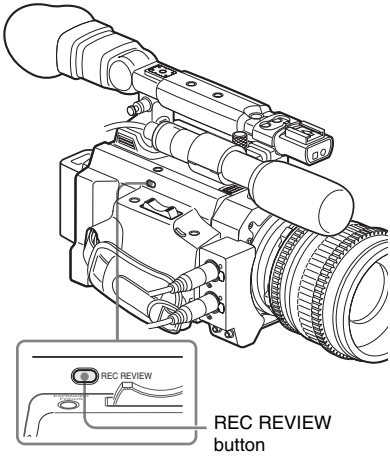
To add or delete the OK mark to or from clips before the last one

Use the Clip Operation menu on the thumbnail screen.

See "Adding/Deleting the OK Mark to/from a Clip (HD Mode Only)" on page 98.

Rec Review

You can review the last recorded clip on the screen (Rec Review).



REC REVIEW button

Press the REC REVIEW button after recording is finished.

You can assign the Rec Review function to an assignable button to use it instead *(page 64)*.

Playback of the specified block of the clip begins. In Rec Review, the last 3 seconds, 10 seconds, or the entire part of the clip is displayed, depending on the Rec Review setting *(page 115)* of the CAMERA SET menu. It is set to 3 seconds at the factory.
Rec Review is terminated at the end of the clip, resuming STBY (recording standby) status.

To interrupt Rec Review

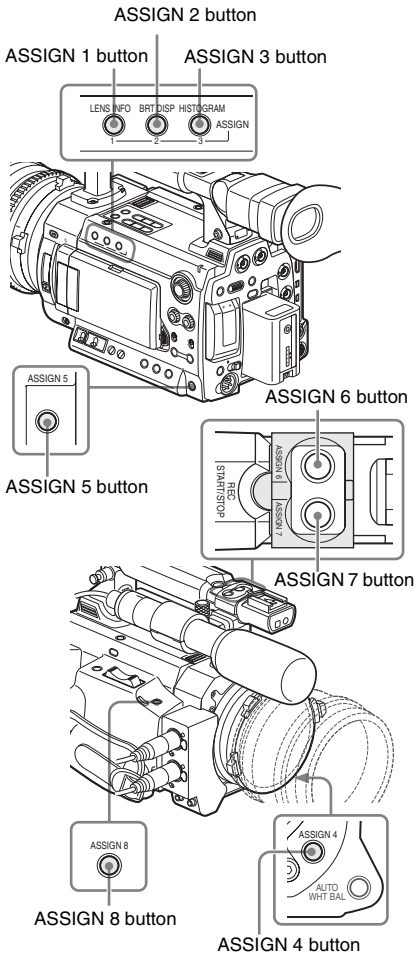
Press the REC REVIEW or STOP button or the assignable button to which you assigned the Rec Review function.
Rec Review is canceled, resuming STBY (recording standby) status.

Notes

- If the duration of the last recorded clip is less than the time (3 or 10 seconds) specified for Rec Review, the clip is played back from the beginning to the end.
  If the clip was recorded in SD mode and segmented into multiple files because the file size exceeded 2GB, only the last file is played.
- During Rec Review playback, the playback control buttons other than the STOP button are disabled.
- If the video format was changed after recording, Rec Review cannot be performed (except when the change was from SP 1440/23.98P to SP 1440/59.94i).
- The Setup and P.PROFILE menus cannot be operated during Rec Review.

Changing Functions of the Assignable Buttons

The camcorder has four assignable buttons to which you can assign various functions for convenience.



The following functions are assigned at the factory:

ASSIGN 1 button (LENS INFO)
Depth-of-field indication on/off

ASSIGN 2 button (BRT DISP)
Brightness-level indication on/off

ASSIGN 3 button (HISTOGRAM)
Histogram indication on/off

ASSIGN 4 and ASSIGN 5 buttons
Recording start/stop

ASSIGN 6[1)], ASSIGN 7[1)], and ASSIGN 8 buttons
No function is assigned (Off).

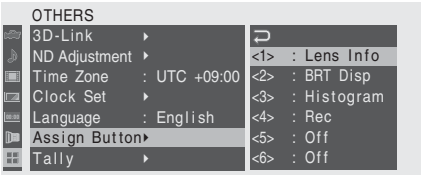
1) When an optional power zoom lens is attached, the ZOOM TELE function is assigned to the ASSIGN 6 button and the ZOOM WIDE function is assigned to the ASSIGN 7 button.

Changing Functions

Use “Assign Button” of the OTHERS menu.

For details on menu operations, see “Basic Menu Operations” on page 110.

1 Select “Assign Button” from the OTHERS menu.



2 Select the button to which you wish to assign a function.

3 Select the function to be assigned.

Function	Contents
Marker	All marker indications (safety-zone marker, center marker, aspect marker, guide frames) on/off
Last Clip DEL	Last clip delete
ATW	ATW function on/off
ATW Hold	ATW Hold function on/off
Rec Review	Rec Review start/stop
Rec	Recording start/stop
Picture Cache	Picture Cache mode on/off
Freeze Mix	Freeze Mix start/stop
Expanded Focus	Expanded Focus function on/off
Spotlight	TLCS Spotlight mode on/off
Backlight	TLCS Backlight mode on/off
IR Remote	IR Remote Commander enable/disable

Function	Contents
Shot Mark1 1)	Shot mark 1 insert
Shot Mark2 1)	Shot mark 2 insert
VF Mode	Viewfinder screen mode (color/ monochrome) switching
BRT Disp	Brightness level indication on/off
Histogram	Histogram indication on/off
Lens Info	Depth-of-Field indication on/off
OK Mark 1)	OK Mark add/delete
One Push AF	One Push Auto Focusing activate (valid only when an optional lens which supports focus control is attached)
One Push AE	One Push Auto Iris activate (valid only when an optional lens which supports iris control is attached)
LCD/VF Adjust	Brightness/contrast level bar on/ off
Send Main Data	Collective copy of camera settings of the main unit to the sub unit (valid only with 3D-Link active)
S-Log LUT	MLUT function for S-Log output on/off

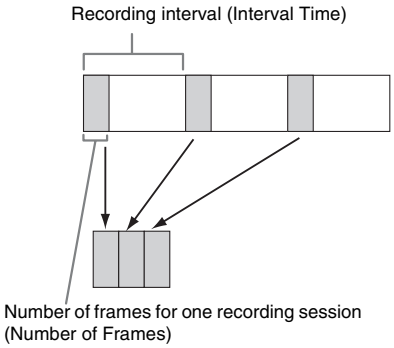
1) Valid in HD mode only

4 Exit the menu.

The assigned functions can be viewed on the BUTTON/REMOTE status screen *(page 108)*.

Interval Recording

The Interval Recording (time-lapse recording) function is especially effective for shooting objects that move very slowly.
The specified number of frames are automatically recorded at the specified intervals.



It is recommended to fix the camcorder to a tripod or equivalent and use the IR Remote Commander to start/stop recording rather than the camcorder.

Notes

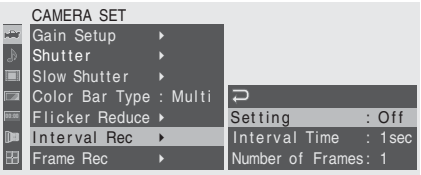
- Interval Recording cannot be set to “On” simultaneously with Frame Recording, Picture Cache Recording, or Slow & Quick Motion. When you set Interval Recording to “On,” Frame Recording, Picture Cache Recording and Slow & Quick Motion are forcibly set to “Off.”
- No audio recording is executed in Interval Recording.
- Interval Recording cannot be made if a setting which includes “HDV” or “DVCAM” is selected with “SDI/HDMI/i.LINK I/O Select” of the VIDEO SET menu.
- Interval Recording cannot be performed if “Format” of “System” of the OTHERS menu is set to “SP 1440/23.98P.”

Preparatory Settings

Before starting Interval Recording, make the necessary settings on the CAMERA SET menu in advance.

For details on menu operations, see "Basic Menu Operations" on page 110.

1 Select "Interval Rec" of the CAMERA SET menu.



2 Set "Setting" to "On."

The camcorder enters Interval Recording mode.
When the special recording mode indication on the screen is active, "Interval Rec" flashes on the screen.

3 Set the time between recordings with "Interval Time."

You can select the time from among 1 to10/15/20/30/40/50 seconds, 1 to 10/15/20/30/40/50 minutes, and 1 to 4/6/12/24 hours by scrolling the display.

4 Set the number of frames to be recorded at a time with "Number of Frames."

When the video format *(page 43)* is set to "HQ 1280/59.94P" or "HQ 1280/50P," you can select from among 2, 6, and 12 frames. With other settings, you can select from among 1, 3, 6, and 9 frames.

5 Exit the menu.

Performing Interval Recording

When the preparatory settings are completed, you can start recording.

Press the REC START/STOP button on the handle or the grip.

Interval Recording begins.

The flashing "Interval Rec" on the screen is now steadily lit.

Notes

- You cannot change the "Interval Time" and "Number of Frames" settings while Interval Recording is in progress. To change them, pause recording.
- After starting Interval Recording, Rec Review operation is disabled, even during an interval.
- The timecode is recorded in Rec Run mode *(page 57)* during Interval Recording.
- Some extra frames may be recorded if you stop recording or switch the card slot while recording is halted in Interval Recording mode.

Stopping Interval Recording

Press the REC START/STOP button on the handle or the grip.

Interval Recording stops.
To restart Interval Recording, press the button again.

Canceling Interval Recording mode

Set "Setting" of "Interval Rec" of the CAMERA SET menu to "Off."

Note

It automatically returns to "Off" when you set the power switch to OFF, while the "Interval Time" and "Number of Frames" settings are maintained.

Frame Recording

The Frame Recording function is especially effective for clay animation recording.
The specified number of frames are recorded intermittently when you press a recording start button.
It is recommended to fix the camcorder to a tripod or equivalent and use the IR Remote Commander to start/stop recording rather than pressing a recording start button of the camcorder.

Notes

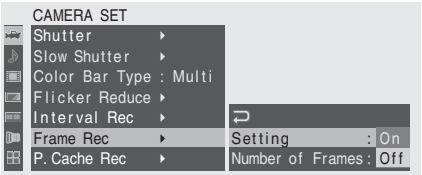
- Frame Recording cannot be set to "On" simultaneously with Interval Recording, Picture Cache Recording or Slow & Quick Motion. When you set Frame Recording to "On," Interval Recording, Picture Cache Recording and Slow & Quick Motion are forcibly set to "Off."
- No audio recording is executed in Frame Recording.
- Frame Recording cannot be made if a setting which includes "HDV" or "DVCAM" is selected with "SDI/HDMI/i.LINK I/O Select" of the VIDEO SET menu.
- Frame Recording cannot be performed if "Format" of "System" of the OTHERS menu is set to "SP 1440/23.98P."

Preparatory Settings

Before starting Frame Recording, make the necessary settings on the CAMERA SET menu in advance.

For details on menu operations, see "Basic Menu Operations" on page 110.

1 Select "Frame Rec" of the CAMERA SET menu.



2 Set "Setting" to "On."

The camcorder enters Frame Recording mode.
When the special recording mode indication on the screen is active, "Frame Rec" flashes on the screen.

3 Select the "Number of Frames" value for one recording session.

You can select from among 2, 6, and 12 when the video format *(page 44)* is set to 720/59.94P or 720/50P.
With other video formats, you can select from among 1, 3, 6, and 9.

4 Exit the menu.

Performing Frame Recording

When the preparatory settings are completed, you can start recording.

1 Press the REC START/STOP button on the handle or the grip.

Recording in Frame Rec mode begins.
The "Frame Rec" indication stops flashing.
When the number of frames you specified with the menu are recorded, the camcorder automatically enters FRM STBY (Frame Rec Standby) status.

2 Press the REC START/STOP button again.

Each time you press the REC START/STOP button, the camcorder records the specified number of frames then enters FRM STBY status.

Notes

- Recording cannot be stopped until the specified number of frames are recorded. If the power switch is set to OFF during recording, the power is only shut off after the specified number of frames are recorded.
- The Rec Review function cannot be used while recording in Frame Rec mode is in progress.
- You cannot change the "Number of Frames" setting while recording in Frame Rec mode is in progress. To change it, pause the recording.
- The timecode is recorded in Rec Run mode *(page 57)* during Frame Recording.

• Some extra frames may be recorded if you stop recording or switch the card slot while recording is paused in Frame Rec mode.

Stopping Frame Recording

Set “Setting” of “Frame Rec” of the CAMERA SET menu to “Off.”

Recording stops and Frame Rec mode is canceled.

Note

It automatically returns to “Off” when you set the power switch to OFF, while the “Number of Frames” setting is maintained.

Picture Cache Recording

When the Picture Cache function is active, the camcorder stores the last few seconds of video captured in the built-in cache memory to permit you to start recording video on an SxS memory card from a point before you start recording. The maximum picture cache time is 15 seconds.

Notes

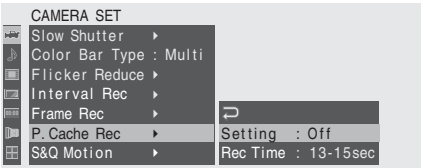
- Picture Cache Recording cannot be set to “On” simultaneously with Frame Recording, Interval Recording, or Slow & Quick Motion. When you set Picture Cache Recording to “On,” Frame Recording, Interval Recording and Slow & Quick Motion are forcibly set to “Off.”
- The following operations set Picture Cache Recording to “Off.”
  —Setting Interval Recording to “On”
  —Setting Frame Recording to “On”
  —Setting Slow & Quick Motion to “On”
  —Changing the recording format
- When Picture Cache Recording is “On,” the time code is recorded in Clock mode when it is selected with the TC/UB SET menu *(page 56)* or in Free Run mode in other conditions.

Preparatory Settings

Before starting Picture Cache Recording, make the necessary settings on the CAMERA SET menu in advance.

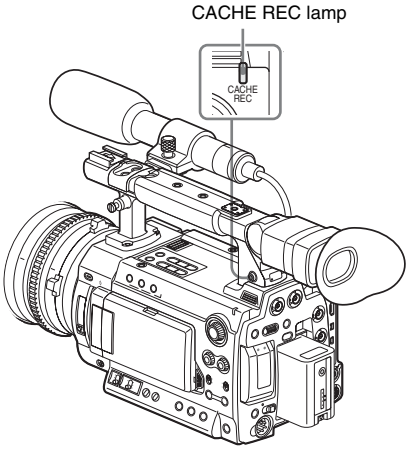
For details on menu operations, see “Basic Menu Operations” on page 110.

1 Select “P.Cache Rec” of the CAMERA SET menu.



2 Set “Setting” to “On.”

The Picture Cache Recording is enabled and the CACHE REC lamp lights.



The Setting On/Off operation can be alternatively made by using an assignable button if you assign the Picture Cache function to the button.

For function assignment, see "Changing Functions of the Assignable Buttons" on page 64.

3 Set the time to cache video with "Rec Time."

You can select the time from among 0-2 sec, 2-4 sec, 4-6 sec, 6-8 sec, 8-10 sec, and 13-15 sec.
(The actual time to trace back to start recording may vary within the selected time range depending on conditions.)

4 Exit the menu.

The special recording/operation status indication block on the screen shows "●CACHE." (● in green).

Performing Picture Cache Recording

Starting Picture Cache Recording

Check that the CACHE REC lamp is lit and press the REC START/STOP button on the handle or the grip.

Recording begins, and stored video in the cache memory is written first to the SxS memory card. The on-screen "●CACHE" indication changes to "●REC."

Stopping Picture Cache Recording

Press the REC START/STOP button on the handle or the grip.

Canceling Picture Cache function

Set "Setting" of "P.Cache Rec" of the CAMERA SET menu to "Off" or press the assignable button to which you assigned the Picture Cache function.

Notes

- If you change the recording format, the cached data are cleared and caching is newly started. Therefore, data cached before you changed the format cannot be recorded if you start Picture Cache Recording immediately after changing the format.
- If you start/stop Picture Cache Recording immediately after you insert an SxS memory card, data may not be recorded on the card.
- Picture caching starts when you activate the Picture Cache function. Therefore, video before the function is activated cannot be recorded with Picture Cache Recording.
- Picture Cache Recording is invalid for external input signal (HDV).
- As picture caching is disabled while an SxS memory card is being accessed, such as during playback, Rec Review, or thumbnail screen display, Picture Cache Recording of such a period cannot be made.
- Although you can change the "Rec Time" setting on the menu even while recording is in progress, any new value becomes valid in such a case only after recording is stopped.

Slow & Quick Motion Recording

When the camcorder is in HD mode and one of the following video formats is selected *(page 43)*, you can set a frame rate for recording different from that for playback:

NTSC Area/NTSC (J) Area
HQ 1920/29.97P, HQ 1920/23.98P, HQ 1280/59.94P, HQ 1280/29.97P, HQ 1280/23.98P

PAL Area
HQ 1920/25P, HQ 1280/50P, HQ 1280/25P

By recording at a different frame rate, you can obtain a smoother slow-motion or quick-motion effect than with slow-speed or fast-speed playback of a material recorded at the normal recording speed.

Example
When the video format is HQ 1280/23.98P, recording with a frame rate between 1 and 23 fps provides a quick-motion effect in playback, and recording with a frame rate between 25 and 60 fps provides a slow-motion effect in playback.

Notes

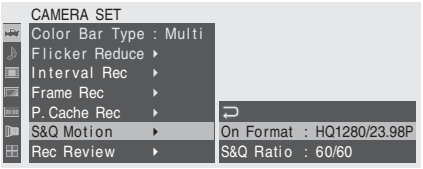
- Slow & Quick Motion recording cannot be activated in SD mode.
- Slow & Quick Motion recording cannot be made if a setting which includes "HDV" or "DVCAM" is selected with "SDI/HDMI/i.LINK I/O Select" of the VIDEO SET menu.
- When you set Slow & Quick Motion to "On," Frame Recording, Interval Recording, and Picture Cache Recording are forcibly set to "Off." However, Slow & Quick Motion cannot be activated while Frame Recording, Interval Recording, or Picture Cache Recording is in progress.
- No audio recording is made if the recording frame rate is set to a value different from the playback frame rate.
- The timecode is recorded in Rec Run mode *(page 57)* during Slow & Quick Motion recording.

Preparatory Settings

Before starting Slow & Quick Motion recording, make the necessary settings with the CAMERA SET menu in advance.

For details on menu operations, see "Basic Menu Operations" on page 110.

1 Select "S&Q Motion" from the CAMERA SET menu.



2 Select the video format for Slow & Quick Motion recording with "On Format."

3 Select the frame rate for recording with "S&Q Ratio."

The setting range varies depending on the current video format.
With a format of 1920 horizontal resolution: 1 to 30 fps
With a format of 1280 horizontal resolution: 1 to 60 fps

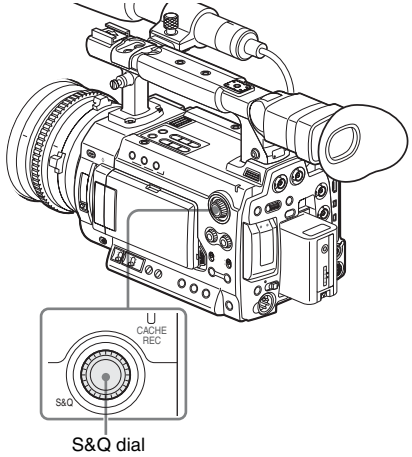
4 Exit the menu.

5 Press the S&Q dial.

A confirmation message is displayed.

6 Operating the jog dial, select "Execute."

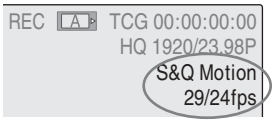
The camcorder enters Slow & Quick Motion mode and the indicator lights.



S&Q dial

In Slow & Quick Motion mode, the frame rate can be varied by rotating the S&Q dial.

When the special recording mode indication on the screen is active, “S&Q Motion” is displayed on the screen and [Recording frame rate]/[Playback frame rate] fps is displayed under “S&Q Motion.”



Recording in Slow & Quick Motion Mode

Starting recording

When the preparatory settings are completed, you can start recording.

Press the REC START/STOP button on the handle or the grip.

Slow & Quick Motion recording begins.

Notes

- You cannot change the “On Format” and “S&Q Ratio” settings while Slow & Quick Motion recording is in progress. To change them, pause the recording.
- The timecode is recorded in Rec Run mode during Slow & Quick Motion recording *(page 56)*.

Stopping recording

Press the REC START/STOP button on the handle or the grip.

Slow & Quick Motion recording stops.

Note

When recording at a low-speed frame rate, it may take time until recording stops after you press the REC START/STOP button.

Canceling Slow & Quick Motion mode

Press the S&Q dial.

Note

Slow & Quick Motion mode is automatically canceled when you set the power switch to OFF, while the “On Format” and “S&Q Ratio” settings are maintained.

Freeze Mix: Image Alignment

Using the Freeze Mix function, an image (still picture) of a clip recorded in HD mode can be temporarily superimposed on the current camera picture, permitting you to easily align images for next recording.

To use the Freeze Mix function

Assign the Freeze Mix function to one of the assignable buttons.

For details, see "Changing Functions of the Assignable Buttons" on page 64.

Superimposing a Freeze Mix image

1 **Stop recording to set the camcorder to STBY (recording standby) status.**

2 **Press the REC REVIEW button to review the recorded images, or press the ASSIGN button to which you assigned "Freeze Mix."**

3 **Press the ASSIGN button to which you assigned "Freeze Mix" at the image with which you want align.**

The image where you pressed the ASSIGN button in step 3 is displayed as a still picture over the current camera picture.

Canceling Freeze Mix status

You can cancel it with the ASSIGN button to which you assigned "Freeze Mix" or the REC START/STOP button on the handle or the grip.

- When you cancel Freeze Mix status by pressing the ASSIGN button, the normal camera picture is restored.
- When you cancel Freeze Mix status by pressing the REC START/STOP button on the handle or the grip, normal recording begins.

Notes

- The Freeze Mix function cannot be used in SD mode.
- The Freeze Mix function cannot be used if the recording video format is SP 1440/23.98P.
- If the recorded picture and the current camera picture differ in video format, the Freeze Mix display cannot be achieved.
- The Freeze Mix display cannot be obtained in Slow & Quick Motion mode or Slow Shutter mode.
- You cannot operate the Setup menus and P.PROFILE menu in Freeze Mix status.

Picture Profiles

You can customize the picture quality, depending on the conditions or circumstances of recording, and store them as a picture profile, enabling the picture quality to be resumed just by your selecting the picture profile.
Ten different picture profiles (PP1 to PP10) can be stored in memory.
The same standard (reference) values are registered to six picture profiles at the factory as those specified for the Picture Profile Off status.
The P.PROFILE menu is available for picture-profile operations.

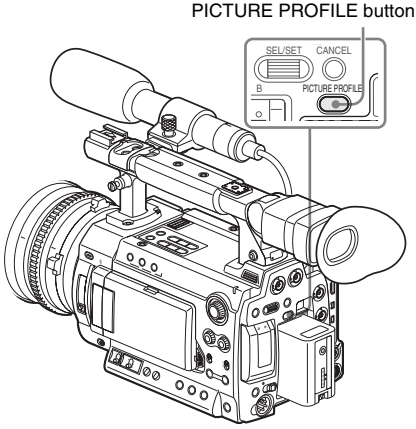
Note

The picture profiles can be operated only in E-E Display mode.

When an external remote control device, such as the RM-B750/B150 Remote Control Unit, is connected, PP10 is automatically selected, and the picture profiles can be adjusted from the control device.

For details, refer to the Supplement in the supplied CD-ROM labeled "Manuals for Solid-State Memory Camcorder."

Registering the Customized Settings as a Picture Profile

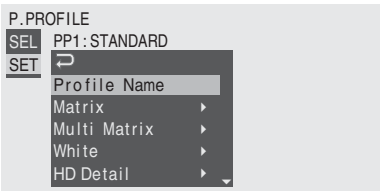


1 Press the PICTURE PROFILE button.

The P.PROFILE menu is displayed.

2 Operating the jog dial, select "SEL" from the P. PROFILE menu then select the picture profile number (PP1 to PP10) to operate.

3 Operating the jog dial, select "SET" and make the settings of the picture profile items.



For details on the setting items, see "Picture Profile Items" on page 76.

4 When the settings are completed, press the PICTURE PROFILE button to exit the menu.

Selecting a Picture Profile

Selecting a Picture Profile using the P.PROFILE menu

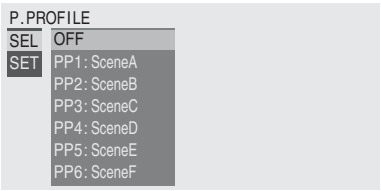
Once you store a picture profile, you can call the picture quality registered in the picture profile as follows:

1 Press the PICTURE PROFILE button.

The P.PROFILE menu is displayed.

2 Operating the jog dial, select "SEL" then the desired picture profile from the list.

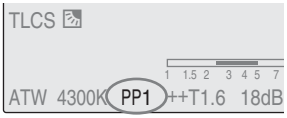
Example:



The camcorder is adjusted to the picture quality specified by the selected Profile. (If you select "OFF," the camcorder will be fixed at the standard picture quality, and no picture adjustment is allowed.)

3 Press the PICTURE PROFILE button to exit the menu.

The picture profile being selected is displayed when you press the DISPLAY/BATT INFO button.



Copying the Settings of a Picture Profile

You can copy the settings of a selected picture profile to another picture profile.

1 Select the source picture profile as mentioned in *"Selecting a Picture Profile using the P. PROFILE menu".*

2 Select "Copy" from "SET" of the P.PROFILE menu.

The picture profile numbers are listed on the screen.

3 Specify the target picture profile.

"Execute" and "Cancel" are displayed.

4 Select "Execute."

Copying begins.

When copying ends, the completion message is displayed for three seconds, and the original screen display is restored.

Resetting a Picture Profile

You can reset a selected picture profile to the factory settings (standard status).

1 Select the picture profile you wish to reset as mentioned in *"Selecting a Picture Profile using the P.PROFILE menu" on page 73*.

2 Select "Reset" from "SET" of the P.PROFILE menu.

"Execute" and "Cancel" are displayed.

3 Select "Execute."

Resetting begins.

When resetting ends, the completion message is displayed for three seconds, and the original screen display is restored.

Storing a Picture Profile on an SxS Memory Card

A picture profile can be sent to and stored on an SxS memory card as a file (filename: PPDATA.SUF).
Only one picture profile can be stored on the same memory card. The stored picture profile can be immediately reproduced by reading from the memory card.

Storing a Picture Profile

1 Insert a recordable SxS memory card into a slot.

Confirm that the corresponding access lamp is lit in green.

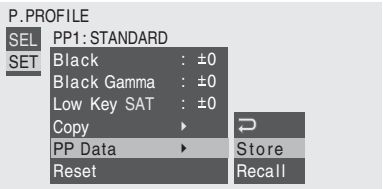
2 Select the picture profile to be stored.

The selected picture profile number is displayed at the bottom of the screen.

See "Selecting a Picture Profile using the P.PROFILE menu" on page 73.

3 Select "SET" of the P. PROFILE menu.

4 Select "Store" of "PP Data."



The message “PP Data Store Execute/Cancel” is displayed at the bottom of the screen.

5 **Select “Execute.”**

Writing of the selected picture profile to the memory card begins.

When writing ends, the completion message is displayed for three seconds, and the original screen display is restored.

Note

After you start writing, do not remove the SxS memory card until the completion message is displayed.

Loading a Picture Profile

1 **Insert the SxS memory card that contains the picture profile to be loaded into a slot.**

Confirm that the corresponding access lamp is lit in green.

2 **Select the picture profile name for which the picture profile is to be loaded from the memory card.**

The selected picture profile number is displayed at the bottom of the screen.

See “Selecting a Picture Profile using the P.PROFILE menu” on page 73.

3 **Select “SET” of the P.PROFILE menu.**

4 **Select “Recall” of “PP Data.”**

The message “PP Data Recall Execute/Cancel” is displayed at the bottom of the screen.

5 **Select “Execute.”**

Loading of the picture profile from the memory card begins.

When overwriting to the picture profile you specified in step **2** ends, the completion message is displayed for three seconds, and the loaded settings are immediately reflected.

Note

After you start loading, do not remove the SxS memory card until the completion message is displayed.

Picture Profile Items

The values when “Off” is selected at “SEL” of the P.PROFILE menu are shown in bold face (example: **Standard**).

P. PROFILE SET		
Items	**Subitems and setting values**	**Contents**
Profile Name Changing the picture profile name	Profile name	Set the profile name in 8 characters at maximum. You can use upper- and lowercase alphabetics, numerics 0 to 9, - (hyphen), _ (underscore) and space.
Matrix Adjusting the color phase over the entire area with matrix operations	Setting **On** / Off	Set to “On” to activate the color phase adjustment function with matrix operations for the entire picture. **Note** When this function is set to “Off,” Multi Matrix is also set to “Off” in synchronization.
	Select **Standard** / High SAT / FL Light / Cinema / F35 709 Like	Select the built-in preset matrix provided for convenience.
	Level –99 to +99 (**±0**)	Adjust the color saturation for the entire picture area.
	Phase –99 to +99 (**±0**)	Adjust the hue for the entire picture area.
	R-G, R-B, G-R, G-B, B-R, B-G –99 to +99 (**±0**)	Finely adjust the color phase for the entire picture area by independently setting each of the factors.
Multi Matrix Makes settings related to multi-matrix correction.	Setting On / **Off**	Set to “On” to enable the multi-matrix correction, which allows specific colors to be selected for saturation correction in a 16-axis hue space.
	Area Indication[1)] On / **Off**	Set to “On” to display a zebra pattern in the areas of the specified color for multi-matrix correction.
	Color Detection[2)] Execute/Cancel	Execute to detect the target color on the screen for multi-matrix correction.
	Axis **B** / B+ /MG- / MG / MG+ / R / R+ / YL- / YL /YL+ / G- / G / G+ / CY / CY+ / B-	Specify a color targeted by multi-matrix correction (16-axis mode).
	Hue –99 to +99 (**±0**)	Set the the hue of the color targeted by multi-matrix correction for each 16-axis mode.
	Saturation –99 to +99 (**±0**)	Adjust the saturation of the color targeted by multi-matrix correction for each 16-axis mode.

P. PROFILE SET

Items	Subitems and setting values	Contents
White Setting the white balance offset and the color temperature of the preset white	Offset White On / **Off**	Set to "On" to shift the conversion value for auto white balance in Memory A or B mode and that for auto tracing white in ATW mode to a lower color temperature or a higher color temperature.
	Offset<A> –99 to +99 (±**0**)	Adjust the volume of the offset white (shifting volumes) of the conversion value in Memory A, Memory B, or ATW mode, respectively.
	Offset<B> –99 to +99 (±**0**)	
	Offset<ATW> –99 to +99 (±**0**)	
	Preset White 2100 to 10000 (**3200**)	Adjust the preset color temperature when Preset white balance mode is selected in steps of 100K. **Notes** • Except when the white balance is in Memory A or B mode or when ATW is active, you cannot confirm the result of changing the Offset White and Offset settings on the screen. • Except when Preset white balance mode is selected, you cannot confirm the result of changing the Preset White settings on the screen.
HD Detail Adjusting the details to be applied to the picture in HD mode	Setting **On** / Off	Set to "On" to apply the details to the video signal.
	Level –99 to +99 (±**0**)	Adjust the detail level.
	Frequency –99 to +99 (±**0**)	Set the center frequency of the details. Setting the center frequency higher decreases the details, and setting it lower increases the details.
	Crispening –99 to +99 (±**0**)	Adjust the noise-suppression level. When you set it to a higher level, less noise may be seen, as fine elements of details are deleted leaving only high-level elements. When you set it to a lower level, fine elements are applied while increasing noise.
	H/V Ratio –99 to +99 (±**0**)	Adjust the horizontal-to-vertical ratio of detail elements. A higher value makes the vertical elements increased with respect to the horizontal elements.
	White Limiter –99 to +99 (±**0**)	Limit the white details.
	Black Limiter –99 to +99 (±**0**)	Limit the black details.
	V DTL Creation NAM / **Y** / G / G+R	Select the source signal to generate vertical details from among NAM (G or R whichever is higher), Y, G, and G+R.
	Knee APT Level –99 to +99 (±**0**)	Adjust the knee aperture level (level of details to be applied to the sections above the knee point).

P. PROFILE SET		
Items	**Subitems and setting values**	**Contents**
SD Detail Adjusting the details to be applied to the picture in SD mode	Setting **On** / Off	Set to “On” to apply the details to the video signal.
	Level –99 to +99 (±**0**)	Adjust the detail level.
	Frequency –99 to +99 (±**0**)	Set the center frequency of the details. Setting the center frequency higher decreases the details, and setting it lower increases the details.
	Crispening –99 to +99 (±**0**)	Adjust the noise-suppression level. When you set it to a higher level, less noise may be seen, as fine elements of details are deleted leaving only high-level elements. When you set it to a lower level, fine elements are applied while increasing noise.
	H/V Ratio –99 to +99 (±**0**)	Adjust the horizontal-to-vertical ratio of detail elements. A higher value makes the vertical elements increased with respect to the horizontal elements.
	White Limiter –99 to +99 (±**0**)	Limit the white details.
	Black Limiter –99 to +99 (±**0**)	Limit the black details.
	V DTL Creation NAM / **Y** / G / G+R	Select the source signal to generate vertical details from among NAM (G or R whichever is higher), Y, G, and G+R.
	Knee APT Level –99 to +99 (±**0**)	Adjust the knee aperture level (level of details to be applied to the sections above the knee point).

P. PROFILE SET		
Items	**Subitems and setting values**	**Contents**
Skin Tone Detail Adjusting the details to be applied to the areas of a specific color phase	Setting On / **Off**	Set to "On" to enable the detail level adjustment for specific color-phase areas. The detail level is uniform over the entire picture with the Off setting.
	Level –99 to +99 (±**0**)	Adjust the skin-tone detail level.
	Area Detection[2)] Execute/Cancel	Execute to detect the color in the center of the screen. The area centering around the detected color becomes the target area for Skin Tone Detail control.
	Area Indication[1)] On / **Off**	Set to "On" to display the Zebra 1 pattern for the target area for Skin Tone Detail control.
	Saturation –99 to +99 (±**0**)	Adjust the color (saturation) level for Skin Tone Detail control. **Note** When Area Detection is executed, this setting is automatically returned to 0.
	Phase 0 to 359 (**130**)	Adjust the center color-phase value for the target area for Skin Tone Detail control. **Note** When Area Detection is executed, this setting is automatically changed to the value equivalent to that of the detected color.
	Width 0 to 90 (**40**)	Adjust the width of the color phase of the target area for Skin Tone Detail control. **Note** When Area Detection is executed, the Width setting automatically returns to 40.
Aperture Making settings related to aperture correction	Setting **On** / Off	Set to "On" to enable aperture correction (processing to improve resolution by adding high-frequency aperture signals to the video signal, which corrects degeneration due to high-frequency characteristics).
	Level –99 to +99 (±**0**)	Select the level for the aperture correction.

P. PROFILE SET		
Items	**Subitems and setting values**	**Contents**
Knee Adjusting the knee level	Setting **On** / Off	Set to "On" to compress the high-luminance area of the picture. **Note** Knee is fixed and cannot be changed in the following cases: • When Gamma is set to CINE1 to 4 • When the electronic shutter is in Slow Shutter mode
	Auto Knee **On** / Off	Set to "On" to automatically set the best knee conditions according to the luminance level of the picture. With "Off" the knee conditions can be manually adjusted independently of the luminance level of the picture.
	Point 50 to 109 (**90**)	Set the knee point when Auto Knee is "Off."
	Slope –99 to +99 (±**0**)	Set the knee slope (volume of compression) when Auto Knee is "Off."
	Knee SAT Level 0 to 99 (**50**)	Adjust the knee saturation level for the area over the knee point.
Gamma Adjusting the gamma compensation level and selecting the gamma curve	Level –99 to +99 (±**0**)	Adjust the gamma compensation level.
	Select STD1 DVW / STD2 ×4.5 / STD3 ×3.5 / STD4 240M / **STD5 R709** / STD6 ×5.0 / CINE1 / CINE2 / CINE3 / CINE4	Select the type of reference curve for gamma compensation. STD1 DVW: DVW camcorder equivalent STD2 ×4.5: ×4.5 gain STD3 ×3.5: ×3.5 gain STD4 240M: SMPTE-240M equivalent STD5 R709: ITU-R709 equivalent STD6 ×5.0: ×5.0 gain CINE1: This smoothes the contrast in darker areas and accentuates gradation changes in brighter areas, for a calm and quiet effect (F35 HG4609G33). CINE2: This gives almost the same results as CINE1. Select this when you wish to obtain 100% video signals for editing or other purposes (F35 HG4600G30). CINE3: This emphasizes the contrast between light and dark more than CINE1 and CINE2, and also accentuates gradation changes on the black side. CINE4: This emphasizes the contrast in dark areas more than CINE3. Contrast in dark areas is weaker and contrast in bright areas is stronger than STD curves. **Note** When the camcorder is in SD mode, the default setting is "STD4 240M."
Black Adjusting the black	–99 to +99 (±**0**)	Adjust the master black level.

P. PROFILE SET		
Items	**Subitems and setting values**	**Contents**
Black Gamma Adjusting the black gamma level	–99 to +99 (±**0**)	Adjust the level of black gamma function that emphasizes only the dark areas of the picture to clear the tones or on the contrary de-emphasizes it to reduce noise.
Low Key SAT Adjusting the low key saturation	–99 to +99 (±**0**)	Adjust the level of the low key saturation to heighten the colors only in the dark areas of the picture or pale them to reduce noise.
Copy Copying a picture profile	Execute / Cancel	Select “Execute” to copy.
PP Data Writing/loading a picture profile	Store	To store a picture profile on an SxS memory card.
	Recall	To load a picture profile from an SxS memory card.
Reset Resetting a picture profile	Execute / Cancel	Select “Execute” to reset.

1) The Area Indication setting is common to all picture profiles PP1 to PP10.

2) **To execute “Color Detection” or “Area Detection”**

1. **Select “Color Detection” or “Area Detection.”**
   A square marker that indicates the detection area appears in the center of the screen, and “Execute” and “Cancel” are displayed below.
2. **Select “Execute.”**
   Color-phase detection in the marker area is performed.
   When detection successfully ends, a completion message is displayed then the screen is restored.
   With Multi Matrix, the target color of multi-matrix correction is changed to the color detected by “Color Detection,” and the Area Indication (zebra pattern) appears on the screen.
   With Skin Tone Detail, the target area for the adjustment is changed to the area centering around the color detected by “Area Detection,” and the Area Indication (zebra pattern) appears on the screen.
   If detection fails, an error message appears, then the precious screen is restored.

Deleting Clips

In E-E Display mode, the Last Clip DEL function for deleting the last recorded clip and the All Clips DEL function for deleting all clips from an SxS memory card are available.

For clip deletion in Thumbnail Screen mode, see "Deleting Clips" on page 99.

Deleting the Last Recorded Clip

Using the assignable button to which you assigned the Last Clip DEL function or the Setup menu, the last recorded clip is easily deleted.

To delete using the assignable button

Assign the Last Clip DEL function to one of the assignable buttons *(see page 64)* in advance.

1 Press the assignable button to which you have assigned "Last Clip DEL."

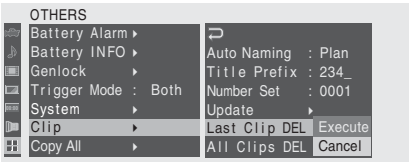
A confirmation message is displayed.

2 Operating the jog dial, select "Execute."

The last recorded clip is deleted from the memory card.

To delete using the Setup menu

1 Select "Last Clip DEL" from "Clip" of the OTHERS menu.



2 Select "Execute."

A confirmation message is displayed.

3 Select "Execute" again.

The last recorded clip is deleted from the memory card.

For details on menu operations, see "Basic Menu Operations" on page 110.

Deleting Clips Collectively

Using the Setup menu, you can delete the recorded clips collectively from the SxS memory card in the selected card slot.

1 Select "All Clips DEL" from "Clip" of the OTHERS menu.

2 Select "Execute."

A confirmation message is displayed.

3 Select "Execute" again.

All the clips are deleted from the memory card.

Notes

- If the SxS memory card contains clips of both of HD mode and SD mode, only the clips of the currently selected mode are deleted.
- Clips with the OK mark applied cannot be deleted.

For details on the OK mark, see "Adding/Deleting the OK Mark to/from a Clip (HD Mode Only)" on page 98.

Operating Planning Metadata

Planning metadata is information about shooting and recording plans, recorded in an XML file. You can shoot using clip names and shot mark names defined in advance in a planning metadata file.

Example of a planning metadata file

```
<?xmlspversion="1.0"spencoding="UTF-8"?>

<PlanningMetadata
xmlns="http://xmlns.sony.net/pro/metadata/planningmetadata"
assignId="P0001" creationDate="2011-08-20T17:00:00+09:00"
lastUpdate="2011-09-28T10:30:00+09:00" load="false" version="1.00">

<Propertiesspropertyid="assignment" update="2011-08-20T09:00:00+09:00"
modifiedBy="Chris">

<TitlespusAscii="Typhoon" xml:lang="ja">Typhoon_Strikes_Tokyo</Title>

</Properties>

</PlanningMetadata>
```

This camcorder can display clip names and shot mark names defined in the following languages:

- English
- Chinese
- German
- French
- Italian
- Spanish
- Dutch
- Portuguese
- Swedish
- Norwegian
- Danish
- Finnish

Notes

- If you define clip and shot mark names in languages other than those listed above, they may not be displayed on the LCD monitor/EVF screen.
- If you define clip and shot mark names in French, Dutch, or Finnish, some characters are displayed in a different but similar font.

Loading a Planning Metadata File

To record planning metadata together with clips, it is necessary to load a planning metadata file into the camcorder's memory in advance.
There are two ways to load files.

- Load a file (.xml) stored under the directory of "BPAV/General/Sony/Planning" on an SxS memory card.
- When a Wi-Fi connection is made between the camcorder and a computer, operate the Web menu built into the camcorder from the computer to transfer a file.

For details on how to use the Web menu to load a planning metadata file, refer to the Supplement in the supplied CD-ROM labeled "Manuals for Solid-State Memory Camcorder".

Loading planning metadata

Use "Plan.Metadata" of the OTHERS menu and proceed as follows:

For details on menu operations, see "Basic Menu Operations" on page 110.

1 Insert an SxS memory card into memory card slot A or B.

2 Select "Load / Slot(A)" or "Load / Slot(B)" of "Plan.Metadata" of the OTHERS menu then select "Execute."

The list of planning metadata files stored on the card in the selected slot appears.

Note

The file list displays up to 64 files.
Even if the total number of planning metadata files is 64 or less, all of the planning metadata files may not appear if the directory where they are located in the SxS memory card (General/Sony/Planning) contains 512 or more files.

3 Select the planning metadata file to load.

The detailed information in the selected planning metadata is displayed.

4 Select "Load."

The confirmation message "Load Planning Metadata File?" is displayed.

5 Select "Execute."

Loading of the selected planning metadata file begins.

When loading ends, the completion message is displayed for three seconds.

Notes

- After you start loading, do not remove the SxS memory card until the completion message is displayed.
- The loaded planning metadata file is retained even if the power of the camcorder is turned off and turned back on again. However, if you start recording immediately after the power is turned on, the contents of the planning metadata may not be applied to the clip, because the camcorder gives priority to starting recording.

Confirming the detailed information in planning metadata

After loading a planning metadata file into memory of the camcorder, you can check the details of the file, such as the filename, time and date of file creation, and the titles specified in the file.

1 Select "Properties" of "Plan.Metadata" of the OTHERS menu.

2 Select "Execute."

The PLANNING METADATA PROPERTIES (planning metadata detailed information) screen appears.
The following information is displayed:

Item	Information
File Name	Filename
Assign ID	Assignment ID
Created	Time and date of creation
Modified	Time and date of most recent modification
Modified by	Name of person who modified the file
Title1	Title1 specified in file (clip name in ASCII format)
Title2	Title2 specified in file (clip name in UTF-8 format)
Material Gp	Number of material groups a)
Shot Mark1	Name defined for Shot Mark 1
Shot Mark2	Name defined for Shot Mark 2

a) Material group: A group of clips recorded using the same planning metadata.

Use the jog dial to scroll the display.

To display the file name, assignment ID or clip name on the full screen

When you select "File Name," "Assign ID," "Title1," or "Title2" on the PLANNING METADATA PROPERTIES screen then press the jog dial, the selected item is displayed on the full screen. This permits you to check a long file or clip name at a glance.
Press the jog dial again to return to the PLANNING METADATA PROPERTIES screen.

Note

Names of shot marks cannot be displayed on the full screen even if you select Shot Mark1 or Shot Mark2.

Clearing the loaded planning metadata

To clear the planning data loaded in the camcorder's memory, proceed as follows:

1 Select "Clear" of "Plan.Metadata" of the OTHERS menu, then select "Execute."

The confirmation message "Clear Planning Metadata File?" is displayed.

2 Select "Execute."

Clearing begins.

When the clearing ends, the completion message is displayed for three seconds.

Defining a Clip Name in Planning Metadata

The following two types of clip name strings can be written in a planning metadata file.

- ASCII-format name, which is displayed on the EVF screen
- UTF-8-format name, which is actually registered as the clip name

You can select the type for displaying the clip name with "Clip Name Disp" under "Plan.Metadata" of the OTHERS menu.

When you specify a clip name in planning metadata, the name is displayed under the operation status indication on the EVF screen.

Note

When both an ASCII format name and a UTF-8 format name are specified in planning metadata, the UTF-8 format string is used as the clip name. If only either ASCII-format name or UTF-8 format name is specified in planning metadata, the specified name is displayed regardless of the menu setting.

Example of clip name strings

Use a text editor to modify the description for the <Title> tag.
The shaded fields in the example are clip name strings. “Typhoon” is described in ASCII format (up to 44 characters).
“Typhoon_Strikes_Tokyo” is described in UTF-8 format (up to 44 bytes).
Here, “sp” indicates a space, and ↵ indicates a carriage return.

```
<?xml sp version="1.0" sp encoding="
UTF-8"?>↵
 <PlanningMetadata sp xmlns="http://
xmlns.sony.net/pro/metadata/
planningmetadata" sp assignId="
P0001" sp creationDate="
2011-08-20T17:00:00+09:00" sp
lastUpdate="
2011-09-28T10:30:00+09:00" sp
version="1.00">↵
    <Properties sp propertyId="
    assignment" sp update="
    2011-09-28T10:30:00+09:00" sp
    modifiedBy="Chris">↵
        <Title sp usAscii="Typhoon" sp
        xml:lang="en">Typhoon_Strikes_Tokyo
        </Title>↵
    </Properties>↵
</PlanningMetadata>↵
```

Notes

- When you create a file, enter each statement as a single line by breaking a line with a CRLF only after the last character of the line, and do not enter spaces except where specified with “sp.”
- A string of up to 44 bytes (or 44 characters) is valid as a clip name. If a UTF-8-format string exceeds 44 bytes, the string up to the 44th byte is used as the clip name. If only a string in ASCII format is specified, the ASCII-format name up to the 44th characters is used as the clip name. When neither the ASCII-format name string nor UTF-8-format name string is valid, a clip name in the standard format is used.

You can use the Sony Planning Metadata Add-in application software supplied with the CBK-WA01 Wi-Fi Adapter to define clip names. For details, refer to the Operating Instructions supplied with the CBK-WA01.

Using a clip name defined in planning metadata

1 Load a planning metadata file that contains the clip name into memory of the camcorder *(page 83)*.

2 Select “Plan” for “Auto Naming” of “Clip” of the OTHERS menu.

Each time that you record a clip, the camcorder automatically generates a name consisting of the clip name defined in the planning metadata file, with the addition of an underscore (_) and a 4-digit serial number (0001 to 9999).
Example: Typhoon_Strikes_Tokyo_0001, Typhoon_Strikes_Tokyo_0002,...
If the serial number reaches 9999, it returns to 0001 upon the next recording.

Note

When you load another planning metadata file, the serial number returns to 0001.

To select the clip name display format

When both an ASCII-format name and a UTF-8-format name have been specified, use “Clip Name Disp” under “Plan.Metadata” of the OTHERS menu to select which one is to display on the LCD monitor/EVF screen.
To display the ASCII-format name: Select “Title1 (ASCII).”
The clip name becomes “Typhoon_Strikes_Tokyo_SerialNumber,” but “Typhoon_SerialNumber” is displayed on the screen.
To display the UTF-8 format name: Select “Title2 (UTF-8).”
The clip name becomes

"Typhoon_Strikes_Tokyo_SerialNumber," and the same name is displayed on the screen.
To not display the clip name: Select "Off."

Note

For a name specified in Japanese, some characters may be displayed in a different font.

Defining Shot Mark Names in Planning Metadata

When you use planning metadata to set shot marks, you can define names for shot mark 0 to shot mark 9. When you record shot marks, you can add the shot mark name strings defined in the planning metadata.

Note

Shot mark 1 and shot mark 2 can be recorded on the camcorder. Shot mark 3 to shot mark 9 and shot mark 0 can be recorded by operation from a computer which is connected with the camcorder via Wi-Fi.

Example of shot mark name strings

Use a text editor to modify the description for the <Meta name> tag.
The shaded fields in the example are shot mark name strings.
Names can be either in ASCII format (up to 32 characters) or UTF-8 format (up to 16 characters).
Here, "sp" indicates a space and ↵ indicates a carriage return.

Note

If a name string contains even one non-ASCII character, the maximum length of that string is limited to 16 characters.

```
<?xml sp version="1.0" sp encoding="
UTF-8"?>↵
<PlanningMetadata sp xmlns="http://
xmlns.sony.net/pro/metadata/
planningmetadata" sp assignId="
H00123" sp creationDate="
2011-04-15T08:00:00Z" sp lastUpdate="
2011-04-15T15:00:00Z" sp version=
"1.00">↵
 <Properties sp propertyId=
"assignment" sp class="original" sp
update="2011-04-15T15:00:00Z" sp
modifiedBy="Chris">↵
    <Title sp usAscii="Football
    Game" sp xml:lang="en">
    Football Game 15/04/2011
    </Title>↵
        <Meta sp name="_ShotMark1" sp
        content="Goal"/>↵
        <Meta sp name="_ShotMark2" sp
        content="Shoot"/>↵
        <Meta sp name="_ShotMark3" sp
        content="Corner Kick"/>↵
        <Meta sp name="_ShotMark4" sp
        content="Free Kick"/>↵
        <Meta sp name="_ShotMark5" sp
        content="Goal Kick"/>↵
        <Meta sp name="_ShotMark6" sp
        content="Foul"/>↵
        <Meta sp name="_ShotMark7" sp
        content="PK"/>↵
        <Meta sp name="_ShotMark8" sp
        content="1st Half"/>↵
        <Meta sp name="_ShotMark9" sp
        content="2nd Half"/>↵
        <Meta sp name="_ShotMark0" sp
        content="Kick Off"/>↵
    </Properties>↵
</PlanningMetadata>↵
```

Note

When you create a file, enter each statement as a single line by breaking a line with a CRLF only after the last character of the line, and do not enter spaces except where specified with "sp," except within clip name strings and shot mark name strings.

You can use the Sony Planning Metadata Add-in application software supplied with the CBK-WA01 Wi-Fi Adapter to define essence mark names. For details, refer to the Operating Instructions supplied with the CBK-WA01.

Copying Planning Metadata Files Collectively

You can copy planning metadata files stored in the General folder on an SxS memory card collectively to another SxS memory card.

1 Select "General Files" from "Copy All" of the OTHERS menu.

The confirmation message "Copy General Files?" is displayed.

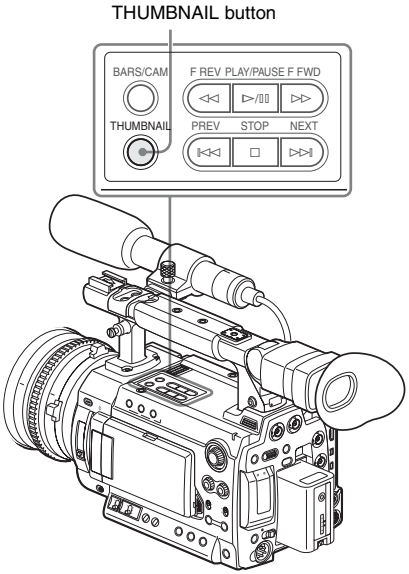
2 Select “Execute.”

Copying begins.

All the planning metadata files stored in the General folder on the SxS memory card are copied.
When copying ends, the completion message is displayed for three seconds.

Thumbnail Screens

When you press the THUMBNAIL button, the clips recorded on the SxS memory card are displayed as thumbnails on the screen. (If no clips are recorded on the card, a no-clip message is displayed.)



You can start playback from the clip selected on the thumbnail screen.
The playback picture can be seen on the LCD monitor/viewfinder and external monitors.

For connection of external monitors, see "Connecting External Monitors and Recording Device" on page 137.

Note

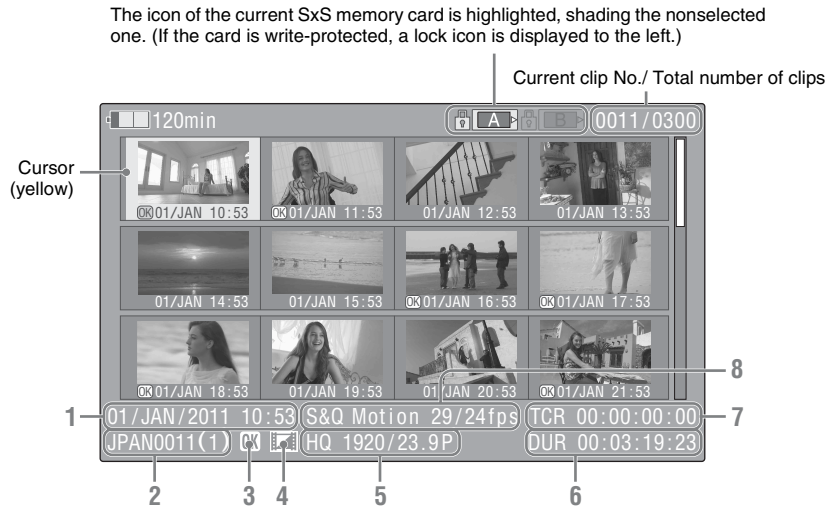
Even if the SxS memory card contains clips of both HD and SD modes, the normal thumbnail screen shows only clips of the mode being selected at "System" of the OTHERS menu *(page 44)*.
To display all recorded clips regardless of the mode, switch the screen to the All-Clip thumbnail screen *(page 91)*. Note that you cannot start playback from the All-Clip thumbnail screen.

To return to the camera image

Press the STOP button to exit the thumbnail screen, returning to the E-E picture (or external input picture).
When you press the REC START/STOP button on the handle or the grip, recording starts, exiting the thumbnail screen.

Configuration of the Thumbnail Screen

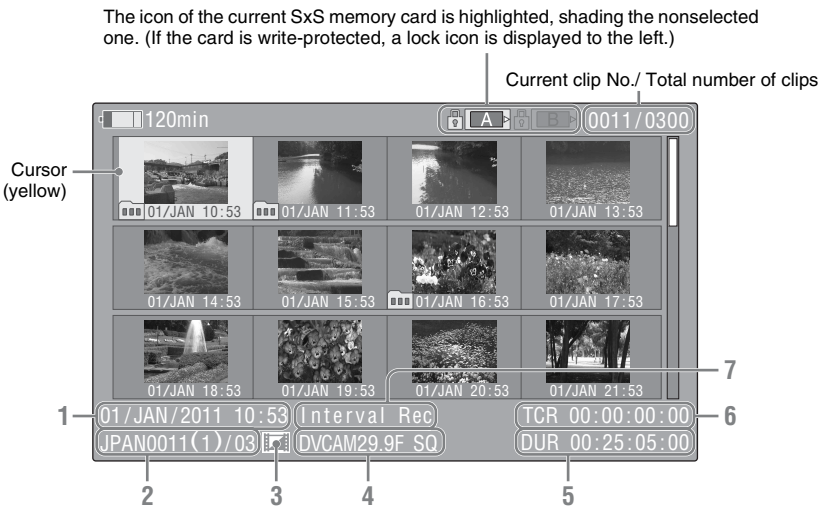
HD mode



The index frame images of the clips are displayed as thumbnails.
The first frame is automatically specified as the index frame of a clip when recorded. You can change it to another one as required *(see page 102)*.
The recording date and starting time are displayed below the index image of each clip. (The OK mark symbol is displayed if the clip is marked.)

Data for the clip at the cursor are displayed in **1** to **8**.

1. **Date and starting time of recording**
2. **Clip name**
3. **OK mark**
   Displayed only if the selected clip is marked OK *(page 98)*.
4. **AV independent file icon**
   Displayed if the selected clip is an AV independent file. This indicates that the clip is an AV independent file, such as those added to the memory card using a computer. Not all operations and indications may be available for such clips.
5. **Recording video format**
   The second digit after the decimal point is not displayed.
6. **Duration of the clip**
7. **Timecode**
   The timecode of the index frame is displayed.
8. **Special recording information**
   If the selected clip was recorded in a special recording mode (S&Q Motion, Interval Rec, or Frame Rec), the mode is displayed.
   For a clip recorded in S&Q Motion mode, [recording frame rate/playback frame rate] fps is displayed to the right.



The top frame images of the clips are displayed as thumbnails.
The recording date and starting time are displayed below the top frame image of each clip.
For the clips segmented into multiple files because their file size exceeded 2GB, a symbol is displayed.
You can check the segment files on the EXPAND CLIP screen *(page 101)*.

Data for the clip at the cursor are displayed in **1** to **7**.

1. Date and starting time of recording

2. Clip name
Only if the selected clip is a segmented one as its file size is over 2GB, the number of partitions is displayed after the name, separated with a slash.

3. AV independent file icon
Displayed if the selected clip is an AV independent file. This indicates that the clip is an AV independent file, such as those added to the memory card using a computer. Not all operations and indications may be available for such clips.

4. Recording video format
The second digit after the decimal point is not displayed.

5. Duration of the clip

6. Timecode
The timecode of the index frame is displayed.

7. Special recording information
If the selected clip was recorded in a special recording mode (Interval Rec or Frame Rec), the mode is displayed.

Changing the Type of Thumbnail Screen

The type of thumbnail screen can be changed by pressing the THUMBNAIL button repeatedly.

In HD mode

Each time you press the button, the normal thumbnail screen, OK-Clip thumbnail screen, and All-Clip thumbnail screen are cyclically displayed.

In SD mode

Each time you press the button, the normal thumbnail screen and All-Clip thumbnail screen are alternately displayed.

Displaying the OK-Clip thumbnail screen (HD mode)

The OK-Clip thumbnail screen shows only the clips marked OK among the clips on the current SxS memory card.
Pressing the THUMBNAIL button with the normal thumbnail screen displayed displays the OK-Clip thumbnail screen.

For operations of the OK mark in E-E Display mode, see "Adding the OK Mark" on page 62.
For operations of the OK mark in Thumbnail Screen mode, see "Adding/Deleting the OK Mark to/from a Clip (HD Mode Only)" on page 98.

Displaying the All-Clip thumbnail screen

The All-Clip thumbnail screen shows all clips both of HD and SD modes recorded on the current SxS memory card, permitting you to check whether the card contains any clips of another mode than that currently selected.
In HD mode, pressing the THUMBNAIL button with the OK-Clip thumbnail screen displayed displays the All-Clip thumbnail screen.
In SD mode, pressing the THUMBNAIL button with the normal thumbnail screen displayed displays the All-Clip thumbnail screen.

Note

You cannot start playback from the All-Clip thumbnail screen.
Press the THUMBNAIL button again to return to the normal thumbnail screen, and playback and clip operations are enabled.

Switching the SxS memory cards

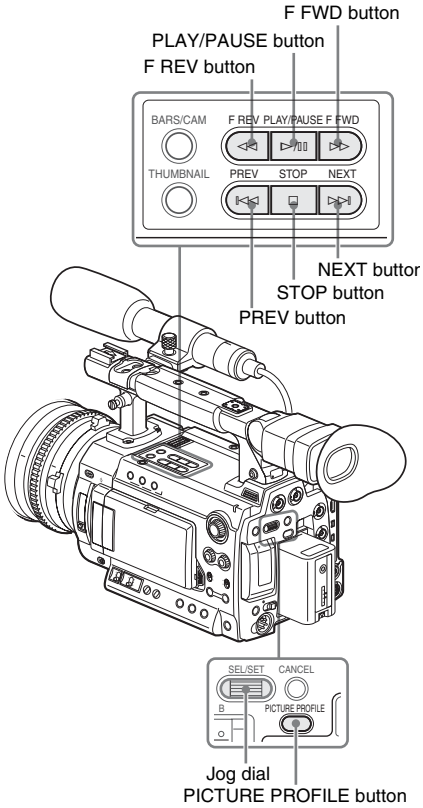
When two memory cards are loaded, press the SLOT SELECT button to switch memory cards.

Note

You cannot switch memory cards during playback.
Continuous playback of cards in slots A and B is not possible.

Playing Back Clips

For playback operations, use the following playback control buttons.



- When the IR Remote Commander is enabled, you can use its playback control buttons instead *(see page 35)*.
- Use the jog dial when you move the cursor on the thumbnail screen or proceed to the next step of operations.

Playing Back the Selected and Subsequent Clips in Sequence

1 **Operating the jog dial, move the cursor to the thumbnail image of the clip with which you wish to start playback.**

To move the cursor vertically, hold the PICTURE PROFILE button and press the jog dial.

2 **Press the PLAY/PAUSE button.**

Playback starts from the beginning of the selected clip.

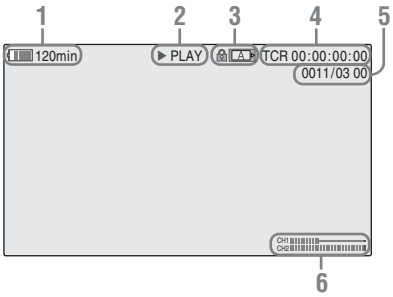
The clips after the selected clips are played back in sequence.
When playback of the last clip ends, the camcorder enters PAUSE (still picture) mode at the last frame of the last clip.
Press the THUMBNAIL button to return to the thumbnail screen.

Notes

- The playback picture may be momentarily distorted or frozen between clips. The playback control buttons and THUMBNAIL button do not function during this condition.
- When you select a clip on the thumbnail screen and start playback, the playback picture at the beginning of the clip may be distorted. To start playback without distortion, once pause playback after starting it, press the PREV button to return to the top of the clip, then restart playback.

Information displayed on the playback screen

The following information is superimposed on the playback picture.



1. **Battery remaining/DC IN voltage**
2. **Playback mode**
3. **SxS memory card in use**
   A mark appears if the memory card is write-protected.
4. **Time data**
   The time data for the playback picture are displayed. Each time you press the TC/U-BIT/DURATION button, the indication is switched between timecode (TCR) and user-bit (UB) data.
5. **Clip no./total number of clips on the memory card**
6. **Audio levels**
   The audio levels in recording are displayed.

Pausing the playback

Press the PLAY/PAUSE button.
The playback is restarted by pressing the button again.

Stopping playback

You can stop playback with either of the following operations:

Press the THUMBNAIL button.

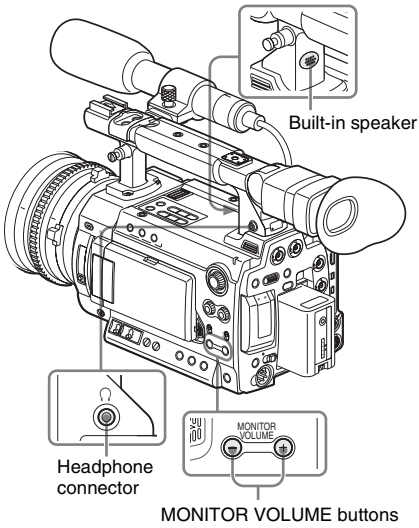
Playback mode is canceled, restoring the thumbnail screen.

Press the STOP button.

Playback mode is canceled, showing the E-E picture or any external input.
To display the thumbnail screen, press the THUMBNAIL button.

Monitoring Audio

In normal playback mode, you can monitor the recorded audio signals through the built-in speaker or connected headphones.



With the headphones connected to the headphone jack, the built-in speaker is turned off.
Press the MONITOR VOLUME buttons to adjust the sound volume.
The level bar is displayed during adjustment.
You can select audio channel(s) to be monitored with “Audio Output” *(page 117)* of the AUDIO SET menu.

Switching to High-Speed Playback

The camcorder permits you to play clips at 4 times, 15 times or 24 times normal speed in the forward or reverse direction. Audio is muffled in 15-time or 24-time high-speed playback.

To play at a high speed in the forward direction

Press the F FWD button.
Each time you press the button, the playback speed switches among 4 times, 15 times and 24-times normal speed.

To play at a high speed in the reverse direction

Press the F REV button.

Each time you press the button, the playback speed switches between 4 times, 15 times and 24 times normal speed.

To return to normal playback

Press the PLAY/PAUSE button.

Cueing Up

To return to the top of the current clip

Press the PREV button.

- When you press the button in normal or fast-forward playback, the top of the current clip is cued up then playback begins.
- When you press the button in fast-reverse playback or in Pause mode, the top of the current clip is cued up, then the still picture is displayed.
- Repeated pressing of the button cues up the previous clips one by one.

To start playback from the top of the first clip

Press the PREV button and F REV button simultaneously. The top of the first-recorded clip on the memory card is cued up.

To jump to the top of the next clip

Press the NEXT button.

- When you press the button in normal or fast-forward playback, the top of the next clip is cued up then playback begins.
- When you press the button in fast-reverse playback or in Pause mode, the top of the next clip is cued up, then the still picture is displayed.
- Repeated pressing of the button cues up the subsequent clips one by one.

To start playback from the top of the last clip

Press the F FWD button and NEXT button simultaneously. The top of the last-recorded clip on the memory card is cued up.

Adding Shot Marks During Playback (HD Mode)

In the same manner as in recording, you can add shot marks to the clip during playback.

At the point where you wish to add a shot mark, press the "Shot Mark1" or "Shot Mark2" assigned button, or the SHOTMARK 1 or 2 button on the IR Remote Commander.

Notes

- No shot mark can be added if the memory card is write-protected.
- No shot mark can be added to the first or last frame of a clip.

Clip Operations

In Thumbnail Screen mode, you can operate the clips or confirm and change the subsidiary data for clips using the Clip Operation menus.

The corresponding Clip Operation menu pops up on the screens as shown below.

Clip Operation Menus

Thumbnail screen ***(page 96)***

- CANCEL
- DISP CLIP INFO
- OK MARK ADD
- OK MARK DEL
- COPY CLIP
- DELETE CLIP
- SHOT MARK
- SHOT MARK1
- SHOT MARK2
- EXPAND CLIP

EXPAND CLIP screen ***(page 101)***

- CANCEL
- EXPAND (COARSE)
- EXPAND (FINE)
- PAUSE
- SET INDEX PIC
- SHOT MARK1 ADD
- SHOT MARK2 ADD
- SHOT MARK1 DEL
- SHOT MARK2 DEL
- DIVIDE CLIP

SHOT MARK screen ***(page 102)***

- CANCEL
- PAUSE
- SET INDEX PIC
- SHOT MARK1 DEL
- SHOT MARK2 DEL
- DIVIDE CLIP

Note

Selectable menu items are limited in SD mode.

Basic Operations of the Clip Operation Menus

Displaying a Clip Operation menu

Press the jog dial.
The Clip Operation menu for the current display pops up.

Selecting a Clip Operation menu item

Turn the jog dial to select a menu item then press the jog dial.
Pressing the CANCEL button restores the previous condition.
Selecting “CANCEL” from a Clip Operation menu turns the Clip Operation menu off.

Notes

- When the SxS memory card is write-protected, you cannot copy/delete/divide clips, change the index frames, and add/delete the OK and shot marks.
- There may be items that cannot be selected depending on the status when the menu is displayed.

Clip Operation menu on the thumbnail screen

Pressing the jog dial with the thumbnail screen *(page 89)* displayed calls the Clip Operation menu for the clip at the cursor.

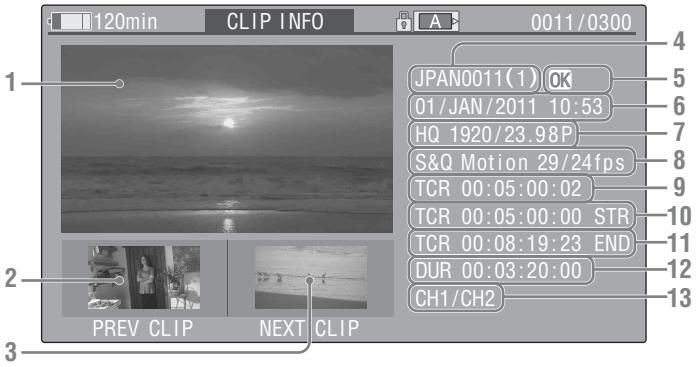
Item	Function
DISP CLIP INFO	To display the CLIP INFO screen for the clip *(page 97)*
OK MARK ADD[1)]	To add the OK mark to the clip *(page 98)*
OK MARK DELETE[1)]	To delete the OK mark from the clip *(page 98)*
COPY CLIP	To copy the clip to another SxS memory card *(page 98)*
DELETE CLIP	To delete the clip *(page 99)*
SHOT MARK[1)]	To display thumbnails only of the frames with shot mark 1 and/or shot mark 2 recorded *(page 101)*
SHOT MARK1[1)]	To display thumbnails only of the frames with shot mark 1 recorded *(page 101)*
SHOT MARK2[1)]	To display thumbnails only of the frames with shot mark 2 recorded *(page 101)*
EXPAND CLIP	To display the EXPAND CLIP screen *(page 100)* for the clip

1) Effective in HD mode only. You cannot select in SD mode.

Displaying the Detailed Information of a Clip

When you select “DISP CLIP INFO” from a Clip Operation menu, the CLIP INFO screen appears.

HD Mode



SD Mode

1. **Image of the current clip**
2. **Image of the previous clip**
   Press the PREV button to switch to the CLIP INFO screen of the previous clip.
3. **Image of the next clip**
   Press the NEXT button to switch to the CLIP INFO screen of the next clip.
4. **Clip name**
   In SD mode, the number of partitions is displayed after the name only if the selected clip is a segmented one because its file size is over 2GB.
   For a clip name of 12 characters or longer, only the first 5 and last 5 characters of the name are displayed. To check the non-displayed block of the name, press the jog dial to display the entire clip name (Long-Display mode). Press the jog dial again to cancel Long-Display mode. Long-Display mode is also canceled by switching to the previous or next clip with the PREV or NEXT button.
5. **OK mark (HD mode only)**
   Displayed only when the selected clip is marked OK.
6. **Date and starting time of recording**
7. **Recording format**
8. **Special recording information**
   If the selected clip was recorded in a special recording mode, S&Q Motion (HD mode only), Interval Rec, or Frame Rec, the mode is displayed.

For a clip recorded in S&Q Motion mode, [recording frame rate/playback frame rate] fps is displayed to the right.

9. **Timecode of the displayed frame**
10. **Timecode at the recording starting point**
11. **Timecode at the recording ending point**
12. **Duration of the clip**
13. **Recorded audio channels**

Adding/Deleting the OK Mark to/from a Clip (HD Mode Only)

By adding the OK mark to clips, you can obtain a thumbnail screen of only the marked clips when you press the THUMBNAIL button.
Clips with the OK mark cannot be deleted or divided. To delete or divide the clip, remove the OK mark.

Adding the OK mark

1 Select "OK MARK ADD" from the Clip Operation menu.

The CLIP INFO screen for the clip appears and a confirmation message appears below the index frame.

2 Select "Execute," and press the jog dial.

The OK mark is applied to the selected clip.

Deleting the OK mark

For a clip already marked with OK, the Clip Operation menu of the thumbnail screen permits you to select "OK MARK DEL."

1 Select "OK MARK DEL" from the Clip Operation menu.

The information screen for the selected clip appears, and a confirmation message is displayed below the index frame image.

2 To delete, select "Execute" then press the jog dial.

The OK mark is deleted from the selected clip.

Copying Clips

You can copy clips on an SxS memory card to another SxS memory card.
Each clip is copied with the same name to the destination SxS memory card.

Notes

- If there is another clip having the same name on the destination SxS memory card, the clip is copied under a name adding a single-digit number in parentheses to the end of the original clip name.
  The parenthetical number is the minimum value that does not exist in the destination memory card.
  Examples:
  ABCD0002(1) if ABCD0002 exists
  ABCD0002(2) if ABCD0002(1) exists
  ABCD0005(4) if ABCD0005(3) exists
- If parenthetical numbers (1) to (9) already exist as the result of repeated copying, copying to that card cannot be done any more.
- A warning message is displayed if there is not sufficient space on the destination SxS memory card. Replace the SxS memory card with one with sufficient space.
- When copying an SxS memory card on which multiple clips have been recorded, copying all clips to the end may not be achieved, even if the destination card has the same capacity as the source card, depending on usage conditions, memory characteristics, etc.

Copying a specified clip

You can copy a clip selected on the thumbnail screen to another SxS memory card.

1 On the thumbnail screen of the current memory card, select the clip you wish to copy then press the jog dial.

The Clip Operation menu of the thumbnail screen pops up.

2 Select "COPY CLIP" from the Clip Operation menu.

The information screen of the selected clip appears, and a confirmation message is displayed below the index frame image.

3 To copy, select "Execute" then press the jog dial.

Copying begins.

An execution message and an in-progress bar are displayed during copying.
When copying ends, the thumbnail screen is restored.

To cancel copying on the way

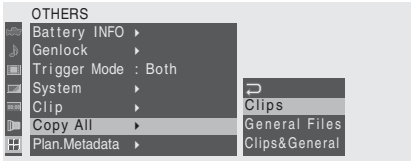
Press the CANCEL button.
Copying is canceled and the thumbnail screen is restored.

Copying clips collectively

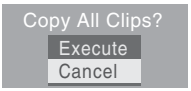
By using the Setup menu, you can copy clips on an SxS memory card collectively to another SxS memory card.
If the memory card contains clips of both HD and SD modes, only the clips of the currently selected mode are copied. This may be convenient when you wish to extract clips of the same mode only.

1 Press the MENU button when the normal thumbnail screen is displayed or in the Stop status.

2 Select "Clips" from "Copy All" of the OTHERS menu.



A confirmation message is displayed.



3 Select "Execute."

Copying begins.

The status of progress is displayed during copying.
In HD mode, only the clips of HD mode are copied.
In SD mode, only the clips of SD mode are copied.

To cancel copying in progress

Press the CANCEL button.
Copying is canceled, and the OTHERS menu screen is restored.

When copying is completed

The completion message is displayed. When the OTHERS menu screen is restored, press the MENU button to exit Menu mode.

To copy the clips and planning metadata files simultaneously

Select "Clips&General" for "Copy All" in step **2** above.
All files in the General folder that contain planning metadata on the SxS memory card are copied simultaneously with the clips.

Deleting Clips

You can delete clips from the SxS memory card.

Note

An HD-mode clip marked OK cannot be deleted. To delete the clip, first remove the OK mark *(see page 98)*.

Deleting a specified clip

You can delete a clip selected on the thumbnail screen.

1 Select the clip you wish to delete on the thumbnail screen then press the jog dial.

The Clip Operation menu of the thumbnail screen pops up.

2 Select "DELETE CLIP" from the Clip Operation menu.

The information screen for the selected clip appears, and a confirmation message is displayed below the index frame image.

3 To delete, select "Execute" then press the jog dial.

The clip is deleted.

The subsequent clips are shifted by one on the thumbnail screen.

Deleting clips collectively

By using the Setup menu, you can delete clips from an SxS memory card collectively.

Notes

- If the memory card contains clips of both HD and SD modes, only the clips of the currently selected mode are deleted.
- HD-mode clips marked OK are not deleted.

1 Press the MENU button when the thumbnail screen of the clips to be deleted is displayed.

2 Select "All Clips DEL" from "Clip" of the OTHERS menu.

3 Select "Execute."

A confirmation message is displayed.

4 Select "Execute" again.

Deleting begins.

The status of progress is displayed during deleting.
In HD mode, only the clips of HD mode are deleted.
In SD mode, only the clips of SD mode are deleted.

To cancel deleting in progress

Press the CANCEL button.
Deleting is canceled, and the OTHERS menu screen is restored.

When deleting is completed

The completion message displayed. When the OTHERS menu screen is restored, press the MENU button to exit Menu mode.

Displaying the EXPAND CLIP Screen

In HD mode, the EXPAND CLIP screen permits you to divide a clip into 12 blocks of equal duration and show a thumbnail image of the first frame of each block on the screen.
In SD mode, the EXPAND CLIP screen shows the thumbnail images of the first frames of the segment files only for a clip segmented because its file size exceeded 2GB.

This helps you to quickly cue up to a desired scene in a clip of long duration.
You can display the EXPAND CLIP screen by selecting the clip on the thumbnail screen.

1 Select a clip on the thumbnail screen then press the jog dial.

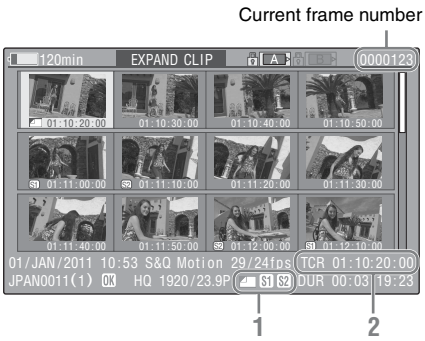
The corresponding Clip Operation menu pops up.

2 Select "EXPAND CLIP" from the Clip Operation menu.

The EXPAND CLIP screen appears for the clip that you selected on the thumbnail screen.

EXPAND CLIP screen in HD mode

In HD mode, thumbnail images of the first frames of 12 blocks equal in duration of a clip are displayed on the EXPAND CLIP screen.



Detailed information for the clip is displayed at the bottom of the screen.
The items other than the following are the same as those on the normal thumbnail screen:

1. **Frame information**

The following icons show the marking for the frame at the cursor.

	Index frame
S1	Frame with shot mark 1 added
S2	Frame with shot mark 2 added

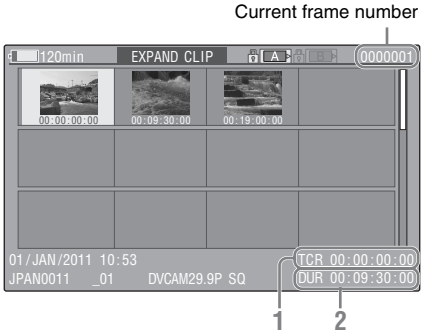
The same icons may also be displayed below the thumbnail image of each frame. If the frame has multiple markings, one of the icons is displayed,

in the priority order of index frame, shot mark 1, and shot mark 2.

2. **Timecode indication**
   The timecode of the frame at the cursor is displayed.

EXPAND CLIP screen in SD mode

In SD mode, the thumbnail images of the first frames of segment files are displayed for a clip segmented because its file size exceeded 2GB on the EXPAND CLIP screen.



Detailed information for the clip is displayed at the bottom of the screen.
The items other than the following are the same as those on the normal thumbnail screen:

1. **Timecode indication**
   The timecode of the segmentation file at the cursor is displayed.
2. **Duration**
   The duration of the segmentation file at the cursor is displayed.

Clip Operation menu on the EXPAND CLIP screen

HD mode

When you select a frame on the EXPAND CLIP screen and press the jog dial, the Clip Operation menu pops up to enable further operations.

Item	Function
EXPAND (COARSE)	To decrease the number of partitions of the clip
EXPAND (FINE)	To increase the number of partitions of the clip
PAUSE	To set to Pause mode at the selected frame
SET INDEX PIC	To specify the selected frame for the index frame of the clip *(page 102)*
SHOT MARK1 ADD	To add shot mark 1 to the selected frame *(page 102)*
SHOT MARK2 ADD	To add shot mark 2 to the selected frame *(page 102)*
SHOT MARK1 DEL	To delete shot mark 1 from the selected frame *(page 102)*
SHOT MARK2 DEL	To delete shot mark 2 from the selected frame *(page 102)*
DIVIDE CLIP	To divide the clip into two clips at the selected frame *(page 103)*

SD mode

You can select “PAUSE” only on the EXPAND CLIP screen in SD mode.

Displaying the SHOT MARK Screen (HD Mode Only)

When one or more shot marks are recorded for a single clip in HD mode, the SHOT MARK screen permits you to display only the marked frames as the thumbnail images on the screen.

1 Select a clip on the thumbnail screen.

2 Press the jog dial.

The Clip Operation menu pops up.

3 Select “SHOT MARK,” “SHOT MARK1,” or “SHOT MARK2.”

SHOT MARK: To display thumbnails only of the frames marked with shot mark 1 and/or shot mark 2 recorded
SHOT MARK1: To display thumbnails only of the frames marked with shot mark 1
SHOT MARK2: To display thumbnails only of the frames marked with shot mark 2

SHOT MARK screen example

The detailed information of the clip is displayed at the bottom of the screen.
The items other than the following are the same as those on the EXPAND CLIP screen:

1. **Timecode indication**
   The timecode of the frame at the cursor on the SHOT MARK screen is displayed.

Clip Operation menu on the SHOT MARK screen

When you select a frame on the SHOT MARK screen and press the jog dial, the Clip Operation menu pops up to permit you further operations.

Item	Function
PAUSE	To set to Pause mode at the selected frame
SET INDEX PIC	To specify the selected frame for the index frame of the clip *(page 102)*
SHOT MARK1 DEL	To delete the shot mark 1 from the selected frame *(page 102)*
SHOT MARK2 DEL	To delete the shot mark 2 from the selected frame *(page 102)*
DIVIDE CLIP	To divide the clip into two clips at the selected frame *(page 103)*

Adding/Deleting Shot Marks (HD Mode Only)

In HD mode, you can add shot marks to the clips after recording or delete the recorded shot marks.

Adding a shot mark on the EXPAND CLIP screen

1. **Select the frame to which you wish to add a shot mark on the EXPAND CLIP screen then press the jog dial.**
   The Clip Operation menu pops up.
2. **Select “SHOT MARK1 ADD” or “SHOT MARK2 ADD” from the Clip Operation menu.**
   The information screen for the selected frame appears, and a confirmation message is displayed below the image.
3. **Select “Execute.”**

Deleting a shot mark

You can delete shot marks on the EXPAND CLIP screen *(page 100)* or on the SHOT MARK screen *(page 101)*.

1. **Select a frame from which you wish to delete the shot mark on the EXPAND CLIP screen or the SHOT MARK screen then press the jog dial.**
   The Clip Operation menu pops up.
2. **Select the “SHOT MARK1 DEL” or “SHOT MARK2 DEL” from the Clip Operation menu.**
   The information screen for the selected frame appears and a confirmation message is displayed below the image.
3. **Select “Execute.”**

Changing the Index Frame (HD Mode Only)

In HD mode, you can change the index frame of a clip to another frame you selected on the EXPAND CLIP screen *(page 100)* or the SHOT MARK screen *(page 101)*.

1. **Select a frame to be the index frame on the EXPAND CLIP screen or the SHOT MARK screen then press the jog dial.**

2 Select "SET INDEX PIC" from the Clip Operation menu.

The information screen of the selected frame appears and a confirmation message is displayed below the image.

3 Select "Execute."

Note

Even if you specify a frame other than the top frame for the index frame, playback always begins from the top frame when you start it from the thumbnail screen.

Dividing a Clip (HD Mode Only)

In HD mode, you can divide a clip into two different clips at the frame you select on the EXPAND CLIP screen *(page 100)* or the SHOT MARK screen *(page 101)*.

1 Select the frame at which the clip is to be divided on the EXPAND CLIP screen or the SHOT MARK screen then press the jog dial.

The Clip Operation menu pops up.

2 Select "DIVIDE CLIP" from the Clip Operation menu.

The information screen for the selected frame appears, and a confirmation message is displayed below the image.

3 Select "Execute."

The selected and subsequent frames are divided, creating two clips having different names.

The title block (4 to 46 characters) of the original clip name is carried on, continuing to the last number on the memory card by the number (4 digits) of the clip.

Example: If you divide a clip named ABCD0002 into two clips under the condition where a new clip will be named EFGH0100, clip ABCD0100 and clip ABCD0101 are created.

Note

If the remaining space on the memory card is insufficient for divided clips, a message informing you of it appears.

Showing the Status Screens

This camcorder provides status screens of five kinds, permitting you to check the various settings and statuses of this unit.
The status screens can also be displayed on an external monitor.

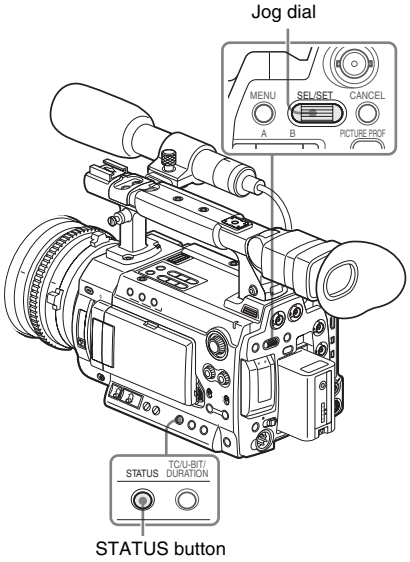
For connections of an external monitor, see "Connecting External Monitors and Recording Device" on page 137.

Available status screens

- CAMERA status screen *(page 105)*
- AUDIO status screen *(page 106)*
- VIDEO status screen *(page 107)*
- BUTTON/REMOTE status screen *(page 108)*
- BATTERY/MEDIA status screen *(page 108)*

Activating the status screen display

Press the STATUS button.



Note

When the expanded focus function is active, the status screen display cannot be obtained. Release the function then press the STATUS button.

Switching the status screens

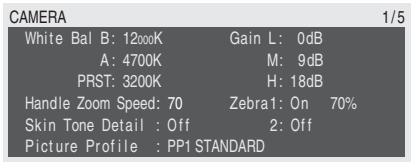
Operating the jog dial switches the screens in sequence.

Canceling the status screen display

Press the STATUS button again. The status screen display is canceled.
(The status screen display is also canceled when you change the operation mode of the camcorder.)

CAMERA Status Screen

The settings and statuses related to image shooting are displayed.



White Bal: White balance status

Display	Contents
B	The color temperature stored in white memory B is indicated. The color temperature of white memory B is detected/ stored when you execute the auto white balance operation in Memory B mode.
A	The color temperature stored in white memory A is indicated. The color temperature of white memory A is detected/stored when you execute the auto white balance operation in Memory A mode.
PRST	The color temperature set as the preset white is indicated. The color temperature of preset white can be changed using the P.PROFILE menu.

Gain: GAIN switch settings

The gain values of the positions L, M, and H of the GAIN switch assigned with the CAMERA SET menu are displayed.

Handle Zoom Speed

(It functions only with an optional power zoom lens attached.)

Zebra: Zebra status

Display	Contents
1	This indication becomes “On” if you turn zebra on with the ZEBRA button when “1” or “Both” is selected for “Zebra Select” of the LCD/VF SET menu. The setting value of “Zebra1 Level” of the LCD/VF SET menu is displayed at the right. It shows “Off” when zebra is off or “2” is selected for “Zebra Select.”
2	This indication becomes “On” if you turn zebra on with the ZEBRA button when “2” or “Both” is selected for “Zebra Select” of the LCD/VF SET menu. It shows “Off” when zebra is off or “1” is selected for “Zebra Select.”

Skin Tone Detail: Skin-tone detail status

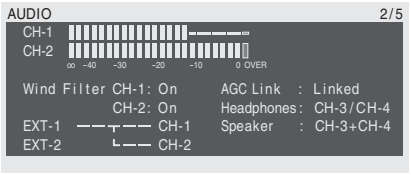
The current status (On or Off) of “Setting” of “Skin Tone Detail” of the P.PROFILE menu is displayed.

Picture Profile: Picture Profile selection status

The selected Picture Profile number and name are displayed. (If Picture Profile is off, “Off” is displayed.)

AUDIO Status Screen

Information regarding audio signals is displayed.



CH-1/CH-2/CH-3/CH-4: Audio level meters

In E-E Display/Recording mode, the levels of the CH-1 and CH-2 audio inputs (E-E audio levels) are displayed.

In Playback mode, the playback audio levels of CH-1/CH-2 or CH-3/CH-4 are displayed according to the "Output CH" setting of the AUDIO SET menu.

If audio input is fed in via the i.LINK (HDV/DV) connector in Thumbnail Screen/Pause mode or in external input recording, the input audio levels are indicated. In this case, the channel indications at the left of the meters are CH-1 and CH-2 regardless of the "Output CH" setting of the AUDIO SET menu.

Wind Filter: Wind filter settings

The current settings of "Wind Filter CH-1" and "Wind Filter CH-2" of the AUDIO SET menu are displayed.

AGC Link: AGC link status

The "AGC Link" status (Linked or Separate) of the AUDIO SET menu is displayed.

EXT–CH-1/CH-2: Audio input settings

The inputs to CH-1 and CH-2 according to the "EXT CH Select" setting of the AUDIO SET menu are displayed.

EXT CH Select	Display
CH-1/CH-2	EXT-1 ———— CH-1 EXT-2 ———— CH-2
CH-1	EXT-1 ——┬—— CH-1 EXT-2 └—— CH-2

Headphones: Headphone output

The output audio channel(s) for the headphones is(are) displayed. The "Monitor CH" setting of the AUDIO SET menu is valid as-is.

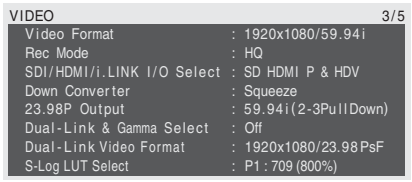
Speaker: Speaker output

The output audio channel(s) for the built-in speaker is(are) displayed. As the speaker is monaural, the outputs are CH-1+CH-2 or CH-3+CH-4 even in stereo mode.

With nonstereo settings, the "Monitor CH" setting of the AUDIO SET menu is valid as-is.

VIDEO Status Screen

The information regarding video signals is displayed.


VIDEO 3/5
Video Format : 1920x1080/59.94i
Rec Mode : HQ
SDI/HDMI/i.LINK I/O Select : SD HDMI P & HDV
Down Converter : Squeeze
23.98P Output : 59.94i(2-3PullDown)
Dual-Link & Gamma Select : Off
Dual-Link Video Format : 1920x1080/23.98PsF
S-Log LUT Select : P1 : 709 (800%)

Video Format: Video format setting

The video format set in "System" of the OTHERS menu is displayed.
In HD mode, the horizontal resolution, frame rate, and scan format are displayed.
In SD mode, the frame rate, scan format, and aspect (SQ/EC) are displayed.

Rec Mode: Recording bit rate (HD mode only)

The bit rate (HQ or SP) of the video format set in "System" of the OTHERS menu is displayed.

SDI/HDMI/i.LINK I/O Select: Digital outputs

The "SDI/HDMI/i.LINK I/O Select" setting of the VIDEO SET menu is displayed.

Display	Contents
HD SDI	To output HD SDI signals from the SDI OUT connector
SD SDI	To output SD SDI signals from the SDI OUT connector
HD HDMI	To output HD HDMI signals from the HDMI OUT connector
SD HDMI P	To output SD HDMI Progressive signals from the HDMI OUT connector
SD HDMI i	To output SD HDMI interlace signals from the HDMI OUT connector
SD HDMI i & DVCAM	To output SD HDMI interlace signals from the HDMI OUT connector and DVCAM streams from the i.LINK(HDV/DV) connector
HD HDMI & HDV	To output HD HDMI signals from the HDMI OUT connector and HDV streams from the i.LINK(HDV/DV) connector
SD HDMI P & HDV	To output SD HDMI Progressive signals from the HDMI OUT connector and HDV streams from the i.LINK(HDV/DV) connector
SD HDMI i & HDV	To output SD HDMI interlace signals from the HDMI OUT connector and HDV streams from the i.LINK(HDV/DV) connector
HD SDI & HDMI	To output HD SDI signals from the SDI OUT connector and SD HDMI interlace signals from the HDMI OUT connector
SD SDI & HDMI i	To output SD SDI signals from the SDI OUT connector and SD HDMI interlace signals from the HDMI OUT connector

Down Converter: Down-converter setting of the SD output (HD mode only)

The "Down Converter" setting (Squeeze, Edge Crop, Letterbox) of the VIDEO SET menu is displayed.

23.98P Output: 23.98P output mode

The "23.98P Output" setting (59.94i(2-3 Pull Down) or 23.98PsF) of the VIDEO SET menu is displayed.

Dual-Link & Gamma Select: Dual-Link output

The "Dual-Link & Gamma Select" setting of the VIDEO SET menu is displayed.

Dual-Link Video Format: Video format for Dual-Link output

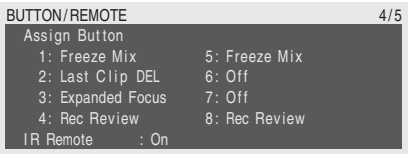
The video format of the signals fed from the HD SDI A/B (Dual-Link) connectors is displayed.

S-Log LUT Select: MLUT setting for S-Log output

The "S-Log LUT Select" setting of the VIDEO SET menu is displayed.

BUTTON/REMOTE Status Screen

The functions assigned to the assignable buttons and the status of the IR Remote Commander are displayed.



Assign Button: Assignable button statuses

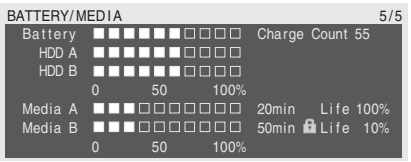
The functions assigned with "Assign Button" of the OTHERS menu to the respective assignable buttons are displayed.

IR Remote: IR Remote Commander status

The status (On: enabled, Off: disabled) of the IR Remote Commander is displayed

BATTERY/MEDIA Status Screen

The information on the battery pack and SxS memory cards is displayed.



Battery: Battery charge remaining

The remaining charge level of the mounted battery pack is displayed.

Charge Count: Repeated charge times

The number of times that the mounted battery pack has been charged is displayed.

HDD A/HDD B: Battery remaining of PHU-120R units

When PHU-120R Professional Hard Disk units are connected, the remaining power levels of the batteries of the PHU-120R units connected via the respective card slots are displayed.

Media A/Media B: Remaining space, available recording time, and estimated service life (rewriting limit)

The remaining space of the SxS memory cards in the respective card slots is indicated on the meters.

At the right, the available time for recording if done at the current bit rate is displayed, in minutes.

The time indication will be "- - min" if no SxS memory card or an invalid card is in the slot.

If the card is write-protected, a icon is shown to the right of the time indication.

The Life value is displayed only for an SxS memory card which supports the life value indication. It indicates the estimated remaining usable period of the card (virgin status as 100%). If an alarm is generated, make a backup of the card as soon as possible and replace it with a new card.

Overview of the Setup Menus

This camcorder permits you to make various settings for recording and playback with Setup menus on the LCD monitor/viewfinder screen. The Setup menus can also be displayed on an external monitor.

For connections of an external monitor, see "Connecting External Monitors and Recording Device" on page 137.

Setup Menu Configuration

The following menu icons are displayed when you press the MENU button, permitting you to select the corresponding menus.

CAMERA SET menu
For setting the items related to recording other than those on picture quality *(page 113)*.
The picture-quality items are set with the P.PROFILE menu *(page 76)*.

AUDIO SET menu
For setting the audio-related items *(page 117)*.

VIDEO SET menu
For setting the items related to video outputs *(page 118)*.

LCD/VF SET menu
For setting the items related to the displays on the LCD monitor/viewfinder *(page 120)*.

TC/UB SET menu
For setting the items related to timecodes and user bits *(page 123)*.

LENS FILE menu
For setting the items related to lens files *(page 124)*.

OTHERS menu
For setting the other items *(page 126)*.

Setup Menu Layers

MENU

- CAMERA SET
  - Auto Black Bal.
  - Gain Setup
  - Shutter
  - Slow Shutter
  - Color Bar Type
  - Flicker Reduce
  - Interval Rec
  - Frame Rec
  - P.Cache Rec
  - S&Q Motion
  - Rec Review
  - TLCS
  - Shockless White
  - White Switch<B>
  - ATW Speed
  - Horizontal Inv.
  - Lens IF
  - Zoom Speed
  - Zoom Transition
  - MF Assist
  - S-Log White ADJ
- AUDIO SET
  - Audio Input
  - Audio Output
- VIDEO SET
  - Input Source Select
  - SDI/HDMI/i.LINK I/O Select
  - SDI/HDMI Out Display
  - Video Out Display
  - Down Converter
  - 23.98P Output
  - Dual-Link & Gamma Select
  - S-Log LUT
  - S-Log LUT Select
  - S-Log EI Mode
  - S-Log EI Select
  - SDI Rec Control

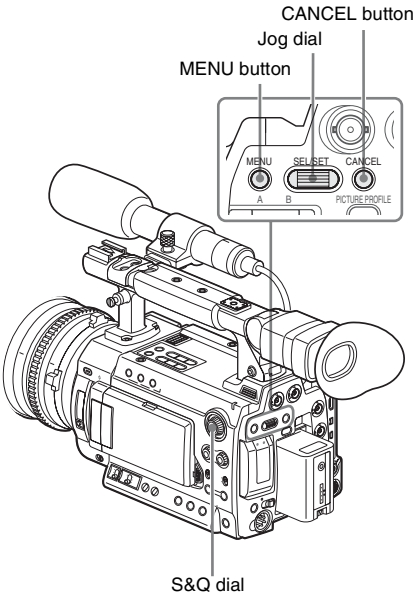
(continues)

- LCD/VF SET
  - LCD
  - VF
  - Peaking
  - Marker
  - Zebra
  - Display On/Off
- TC/UB SET
  - Timecode
  - Users Bit
  - TC Format
- LENS FILE
  - Information
  - Operation
  - Setting
  - Auto FB Adjust
- OTHERS
  - All Reset
  - Camera Data
  - LUT Memory
  - 3D-Link
  - ND Adjustment
  - Time Zone
  - Clock Set
  - Language
  - Assign Button
  - Tally
  - Hours Meter
  - IR Remote
  - Battery Alarm
  - Battery INFO
  - Genlock
  - Trigger Mode
  - System
  - Clip
  - Copy All
  - Plan.Metadata
  - Network
  - Wi-Fi
  - Option
  - InstallOption
  - Remove Option
  - Menu Scroll
  - Format Media
  - Version
  - Version Up

Basic Menu Operations

This section covers basic operations for setting the Setup menu items.

Menu controls



MENU button

To turn Menu mode to use Setup menus on/off.

Jog dial (SEL/SET dial)

When you turn the dial, the cursor moves up or down, permitting you to select menu items or setting values.

CANCEL button

To return to the previous layer of the menu. An uncompleted change is canceled.

S&Q dial

When you hold the CANCEL button and press the S&Q dial, the S&Q dial enters Jog Dial mode, permitting you to select menu items or setting values in the same manner as with the jog dial. The S&Q dial returns to normal S&Q Dial mode if you turn off the power of the camcorder or press

the S&Q dial while holding the CANCEL button again.

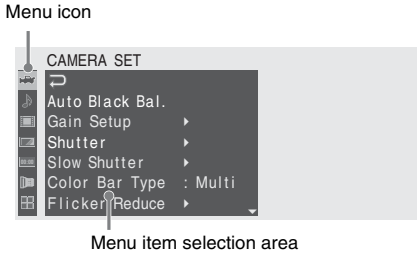
Displaying the Setup menu

Press the MENU button.

The menu icons appear on the screen.

The cursor is displayed on the icon of the menu used last, and the corresponding menu item selection area is displayed to the right.

Example: When the cursor is located at (CAMERA SET menu icon)



Note

When the camcorder is in EXPANDED FOCUS mode *(page 54)*, the Setup menus cannot be operated. Press the EXPANDED FOCUS button to release the mode.

Setting the Setup menus

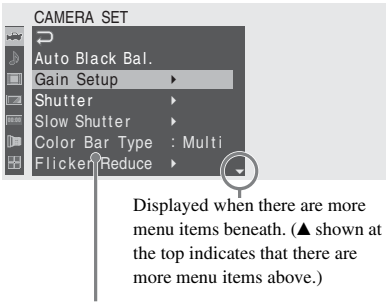
1 Rotate the jog dial to set the cursor to the icon of the menu you wish to set.

The selectable menu items are displayed in the menu item selection area to the right of the icon.

2 Press the jog dial.

The cursor moves to the menu item selection area.

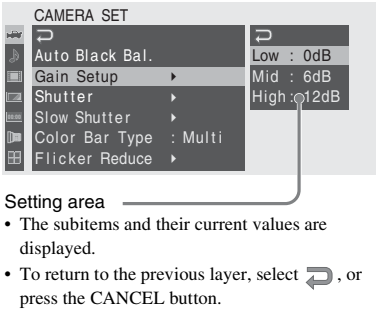
- The menu item selection area can show 7 lines at maximum. When all the selectable items cannot be displayed at one time, you can scroll the display up or down by moving the cursor.
  A triangle appears at the upper or lower right corner of the menu item selection area to indicate that scrolling is enabled.
- When "Menu Scroll" of the OTHERS menu is set to "Loop," the cursor jumps to the top after it reaches the bottom in downward scrolling (or vice versa in upward scrolling).


CAMERA SET
Auto Black Bal.
Gain Setup
Shutter
Slow Shutter
Color Bar Type : Multi
Flicker Reduce
Displayed when there are more menu items beneath. (▲ shown at the top indicates that there are more menu items above.)
Menu item selection area

- A ▶ symbol is displayed to the right of any item that has subitems.
- The current setting value is displayed to the right of an item that has no subitems.
- To return to the previous layer, select .

3 Turn the jog dial to set the cursor to the menu item you wish to set then press the dial to proceed.

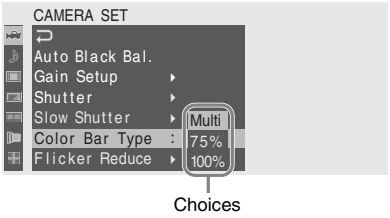
The setting area appears to the right of the menu item selection area, and the cursor moves to the top of its subitems.



- The subitems and their current values are displayed.
- To return to the previous layer, select , or press the CANCEL button.

When you select an item that has no subitems and to be only On /Off or switched, the choices are displayed to the right of the item. In this case, proceed to step **5**.

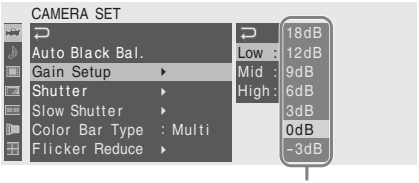
Example



Choices

4 For the item that has subitems, turn the jog dial to set the cursor to the subitem you wish to set then press the dial to proceed.

The available values of the selected subitems are displayed, and the cursor moves to the current value.



Available value area

- The available value area can show 7 lines at maximum. When all the selectable values cannot be displayed at one time, you can scroll the display up or down by moving the cursor.
  A triangle appears at the upper or lower right corner of the available value area to indicate that scrolling is enabled.
- For items having a wide range of available values (example: –99 to +99), the available value area is not displayed. The current setting is highlighted instead, indicating that the setting is ready for change.

5 Select the desired value by turning the jog dial then press the dial to make the setting.

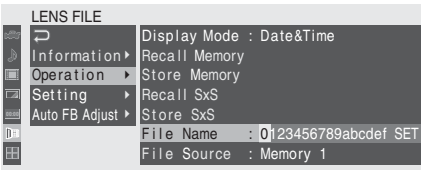
The setting is changed, and the new setting is displayed.
When you select “Execute” for an execution item, the corresponding function is executed.

For an item that requires your confirmation

When you select an item that you must confirm before execution in step 3, the menu display temporarily disappears, and a confirmation message is displayed. Following the instructions of message, specify whether to execute or cancel.

Entering a character string

When you select an item for which a character string, such as a time value or filename, is to be specified, the input area for the character string is highlighted, and “SET” appears at the right end.



1 Select characters by turning the jog dial then press the dial to proceed.

The cursor moves to the next column.

2 Perform setting in the same manner up to the last column/digit.

The cursor moves to “SET.”

3 Press the jog dial.

The setting is completed.

Terminating the menu operation

Press the MENU button.

The normal camera picture is resumed.

Setup Menu List

The functions and available settings of menus are listed below.
The default settings set at the factory are shown in bold face (example: **Speed**).

Note

The items and setting values that cannot be selected at the time depending on the version of the camcorder, the input or output statuses and the setting status of other menu items, are shaded.

CAMERA SET Menu

CAMERA SET

Menu items	Subitems and setting values	Contents
Auto Black Bal. Adjusting the black balance automatically	Execute/Cancel	Select "Execute" to start the automatic black balance adjustment.
Gain Setup Assigning gain levels to the three GAIN switch positions	Low –3 / **0** / 3 / 6 / 9 /12 /18 dB	Set the gain level to be used when the switch is set to the L position.
	Mid –3 / 0 / 3 / **6** / 9 /12 /18 dB	Set the gain level to be used when the switch is set to the M position.
	High –3 / 0 / 3 / 6 / 9 / **12** / 18 dB	Set the gain level to be used when the switch is set to the H position.
Shutter Specifying operating conditions of the electrical shutter	Mode **Speed** / Angle / ECS	Select modes of the Electronic Shutter.
	Shutter Speed **1/100**	Set the shutter speed when Speed mode is selected. *The available setting values vary depending on the frame rate of the video format selected (see page 51).*
	Shutter Angle 11.25º / 22.5º / 45º / 72º / 86.4º / 90º / 144º / 150º / 172.8º /**180º** / 216.0º	Set the shutter angle when Angle mode is selected. *When the frame rate is set to a value in the range of 1 to 16 in Slow & Quick Motion mode, you cannot select 72º, 86.4º, 144º, 150º, 172.8º, and 216.0º.*
	ECS Frequency **60.00**	Set the ECS frequency when ECS mode is selected. *The available setting values vary depending on the frame rate of the video format selected.*
Slow Shutter Setting the Slow Shutter mode	Setting On / **Off**	Turn Slow Shutter mode on/off.
	Number of Frames **2** to 8	Set the number of frames to accumulate.
Color Bar Type Selecting the types of color bar	**Multi** / 75% / 100%	Select the type of color bars displayed when you press the BARS/CAM button. Multi: To output multiformat color bars 75%: To output 75% color bars 100%: To output 100% color bars

CAMERA SET

Menu items	Subitems and setting values	Contents
Flicker Reduce Setting Flicker Compensation	Mode Auto / On / **Off**	Set the operation of the Flicker-Reduction function. On: To always activate it Auto: To automatically activate it when flicker is detected. Off: To not activate it
	Frequency 50 Hz / **60 Hz**	Set to the power supply frequency of the light source causing flicker.
Interval Rec Setting the Interval Recording function	Setting On / **Off**	Turn the Interval Recording function on/off.
	Interval Time **1** to 10/15/20/30/40/50 sec 1 to 10/15/20/30/40/50 min 1 to 4/6/12/24 hour	Set the interval of recording in Interval Recording.
	Number of Frames **1** / 3 / 6 / 9 or **2** / 6 /12 (HQ 1280/59.94P, HQ 1280/50P)	Set the number of frames to be recorded at a time in Interval Recording.
Frame Rec Setting the Frame Recording function	Setting On / **Off**	Turn the Frame Recording function on/off.
	Number of Frames **1** / 3 / 6 / 9 or **2** / 6 /12 (HQ 1280/59.94P, HQ 1280/50P)	Set the number of frames to be recorded at a time in Frame Recording.
P.Cache Rec Setting the Picture Cache Recording function	Setting On / **Off**	Turn the Picture Cache Recording function on/off.
	Rec Time **0-2sec** / 2-4sec / 4-6sec / 6-8sec / 8-10sec /13-15sec	Set the time to cache video in the picture cache memory (the time to a point where recording is to start when you press a recording start button in Picture Cache Recording).
S&Q Motion Setting the S&Q Motion function	On Format Country: NTSC Area/NTSC(J) Area HQ 1920/29.97P HQ 1920/23.98P HQ 1280/59.94P HQ 1280/29.97P **HQ 1280/23.98P** Country: PAL Area HQ 1920/25P HQ 1280/50P **HQ 1280/25P**	Set the recording video format in Slow & Quick Motion recording.
	S&Q Ratio With “On Format” at HQ 1920/29.97P, HQ 1920/23.98P (NTSC) 1 to **30** With “On Format” at HQ 1280/59.94P, HQ 1280/29.94P, HQ 1280/23.98P (NTSC) 1 to 60 (**30**) With “On Format” at HQ 1920/25P (PAL) 1 to **25** With “On Format” at HQ 1280/50P, HQ 1280/25P (PAL) 1 to 50 (**25**)	Set the recording frame rate in Slow & Quick Motion recording.

CAMERA SET

Menu items	Subitems and setting values	Contents
Rec Review Setting the playback time for Rec-Review	**3 sec** / 10 sec / Clip	Set the time to play the last recorded clip using the Rec-Review function. 3 sec: Last 3 seconds 10 sec: Last 10 seconds Clip: Entire duration of the clip
TLCS Setting the Total Level Control System (auto adjustment system of gain, iris and shutter) **Note** The auto iris control function operates only with an optional lens which supports auto iris control attached.	Level +1.0 / +0.5 / ±**0** / –0.5 / –1.0	Set the target level (to make brighter or darker) of auto iris control in TLCS. (This setting also affects the gain control in AGC mode and shutter-speed control in Auto Shutter mode.) +1.0: Approx. one stop further open +0.5: Approx. half a stop further open ±0: Standard –0.5: Approx. half a stop further closed –1.0: Approx. one stop further closed
	Mode Backlight / **Standard** / Spotlight	Set the auto iris control mode in TLCS. Backlight: Backlight mode to reduce darkening of the center subject against lights Standard: Standard mode Spotlight: Spotlight mode to reduce blown-out highlights on the center subject in the spotlight
	Speed –99 to +99 (**+50**)	Set the tracing speed of TLCS control.
	AGC On / **Off**	Turn the AGC (Auto Gain Control) function on/off.
	AGC Limit 3 / 6 / 9 / **12** / 18 dB	Set the maximum gain in AGC.
	AGC Point **F2.8** / F4 / F5.6	Set the iris point for switching to auto-iris and auto-shutter control when AGC is on.
	Auto Shutter On / **Off**	Turn the Auto Shutter control function on/off.
	A.SHT Limit 1/100 1/150 1/200 **1/250**	Set the maximum shutter speed in Auto Shutter control.
	A.SHT Point F5.6 / F8 / F11 / **F16**	Set the iris point for switching auto-iris and auto-shutter control when Auto Shutter is on.
Shockless White Setting the shockless white balance	Off / 1 / **2** / 3	Select the speed of change in white balance when the white balance mode is switched. Set to "Off" to instantly change the white balance. Select a larger number to change the white balance more slowly through interpolation.
White Switch <B> Setting for the WHITE BALANCE switch	**ATW** / MEM	Select the mode (ATW or Memory B) selected at the B position of the WHITE BALANCE switch.
ATW Speed Setting for Auto Tracing White Balance	1 / 2 / **3** / 4 / 5	Set the tracing speed of ATW. The larger the number you set, the speed becomes faster.

CAMERA SET

Menu items	Subitems and setting values	Contents
Horizontal Inv. Setting the image inversion function	**On** / Off	Set to “On” to horizontally invert the image.
Lens IF Selecting the lens interface	**Type C** / Type A / Off	Select the appropriate lens interface in advance before attaching a lens. Type C: For lenses with a Cooke-type connector and those supplied with the PMW-F3K Type A: For lenses with a ARRI-type connector Off: For other lenses
Zoom Speed Setting the zoom speed (only with a power zoom lens attached)	Assign 8 to 99 (**50**)	Set the speed of zooming with the servo zoom lever on the grip.
	Remote 8 to 99 (**50**)	Set the speed of zooming with the ZOOM T/W button of the IR Remote Commander. **Note** If the infrared line from the Remote Commander is not received properly, zooming may not operate smoothly.
Zoom Transition Setting the zoom operation with the ASSIGN 6 and 7 buttons (only with a power zoom lens attached)	**Linear** / Soft	Set the operation mode at the beginning and end of zooming with the on-handle ASSIGN 6 and 7 buttons. Linear: Zooming is performed at the same speed from the beginning to the end. Soft: Zooming is slowly performed at the beginning and the end.
MF Assist Turning the MF Assist Function on/off (only with a power zoom lens attached)	**On** / Off	Set to “On” to precisely adjust the focus automatically after you roughly adjust it manually.
S-Log White ADJ Adjusting individual variability of preset white (3200K) for S-Log outputs	R Offset –499 to +499 (**±0**)	Adjust the R level.
	B Offset –499 to +499 (**±0**)	Adjust the B level.

AUDIO SET Menu

AUDIO SET

Menu items	Subitems and setting values	Contents
Audio Input Setting for audio inputs	TRIM CH-1 –20 dBu to –65 dBu (**–41 dBu**)	Finely adjust the sensitivity of channel 1 of microphone input in steps of 3 dB in Manual audio adjustment mode.
	TRIM CH-2 –20 dBu to –65 dBu (**–41 dBu**)	Finely adjust the sensitivity of channel 2 of microphone input in steps of 3 dB in Manual audio adjustment mode.
	Limiter On / **Off**	Turn the audio limiter on/off.
	MIC AGC **High** / Low	Select the sensitivity of the microphone inputs.
	AGC Link **Linked** / Separated	Select the gain link condition when the audio level adjustment is in AGC mode. Linked: To vary the CH-1 gain and the CH-2 gain in synchronization. Separated: To vary the CH-1 gain and the CH-2 gain independently according to the respective levels.
	1KHz Tone On / **Off**	Turn the 1-kHz reference tone signal on/off.
	Wind Filter CH-1 On / **Off**	Turn the wind filter for channel 1 on/off.
	Wind Filter CH-2 On / **Off**	Turn the wind filter for channel 2 on/off.
	EXT CH Select CH-1 **CH-1/CH-2**	CH-1: To record channel 1 audio input on both channels 1 and 2. It is recommended to set the AUDIO SELECT (AUTO/MANUAL) switch and AUDIO LEVEL control for CH-2 *(page 59)* as well as the above TRIM CH-2 to the same conditions as those for CH-1. CH-1/CH-2: To record channel 1 and channel 2 inputs on the respective channels.
Audio Output Setting for audio outputs	Monitor CH **CH-1/CH-2** (CH-3/CH-4) CH-1+CH-2 (CH-3+CH-4) CH-1 (CH-3) CH-2 (CH-4)	Select the audio channel(s) to be fed to the headphones and the built-in speaker. CH-1/CH-2 (CH-3/CH-4): Stereo CH-1+CH-2 (CH-3+CH-4): Mix CH-1 (CH-3): CH-1 (CH-3) only CH-2 (CH-4): CH-2 (CH-4) only ( ): with “Output CH” set to “CH-3/CH-4”
	Output CH **CH-1/CH-2** CH-3/CH-4	Select audio output channels from either channels 1 and 2 or channels 3 and 4.
	Alarm Level 0 to 7 (**4**)	Set the alarm sound volume.
	Beep On / **Off**	Select whether or not to sound a beep upon each operation.

VIDEO SET Menu

VIDEO SET

Menu items	Setting values	Contents
Input Source Select Setting the input source	**Camera** / i.LINK	Select video and audio signal for the input source. Camera: Camera image i.LINK: HDV/DVCAM input via the i.LINK(HDV/DV) connector **Note** DVCAM input is for display only and cannot be recorded.
SDI/HDMI/ i.LINK I/O Select Selecting input/ output signals for the connectors	• When "Dual-Link & Gamma Select" is not set to "Off" With a video format of HQ 1920/ HQ 1440/HQ 1280: **HD SDI** SD SDI HD HDMI SD HDMI P SD HDMI i SD HDMI i & DVCAM With a video format of SP 1440: **HD SDI** SD SDI HD HDMI & HDV SD HDMI P & HDV SD HDMI i & HDV SD HDMI i & DVCAM With a video format of DVCAM: **SD SDI** SD HDMI i & DVCAM • When "Dual-Link & Gamma Select" is set to "Off" With a video format of HQ 1920/ HQ 1440/HQ 1280: **HD SDI & HDMI** SD SDI & HDMI i HD HDMI SD HDMI P SD HDMI i SD HDMI i & DVCAM With a video format of SP 1440: **HD SDI & HDMI** SD SDI & HDMI i HD HDMI & HDV SD HDMI P & HDV SD HDMI i & HDV SD HDMI i & DVCAM With a video format of DVCAM: **SD SDI & HDMI i** SD HDMI i & DVCAM	HD SDI: To output HD SDI signals from the SDI OUT connector. SD SDI: To output SD SDI signals from the SDI OUT connector HD HDMI: To output HD HDMI signals from the HDMI OUT connector SD HDMI P: To output SD HDMI Progressive signals from the HDMI OUT connector SD HDMI i: To output SD HDMI interlace signals from the HDMI OUT connector SD HDMI i & DVCAM: To output SD HDMI interlace signals from the HDMI OUT connector and DVCAM streams from the i.LINK(HDV/DV) connector HD HDMI & HDV: To output HD HDMI signals from the HDMI OUT connector and HDV streams from the i.LINK(HDV/DV) connector SD HDMI P & HDV: To output SD HDMI Progressive signals from the HDMI OUT connector and HDV streams from the i.LINK(HDV/DV) connector SD HDMI i & HDV: To output SD HDMI interlace signals from the HDMI OUT connector and HDV streams from the i.LINK(HDV/DV) connector HD SDI & HDMI: To output HD SDI signals from the SDI OUT connector and SD HDMI interlace signals from the HDMI OUT connector. SD SDI & HDMI i: To output SD SDI signals from the SDI OUT connector and SD HDMI interlace signals from the HDMI OUT connector. **Notes** • No signal is output from the SDI OUT connector with any setting other than "HD SDI" and "SD SDI." • Slow & Quick Motion mode cannot be used with a setting for inputting/outputting a DVCAM stream.

VIDEO SET Menu items	Setting values	Contents
SDI/HDMI Out Display Setting the character information for digital outputs	On / **Off**	Set whether to add the same menus and status indications as those on the LCD monitor/viewfinder screen to the output signals from the SDI OUT and HDMI OUT connectors. **Note** On the thumbnail, EXPAND CLIP and SHOT MARK screens, the same menus and status indications as those on the LCD monitor/viewfinder screen are displayed regardless of the setting of this item.
Video Out Display Setting the character information for the composite output	On / **Off**	Set whether to add the same menus and status indications as those on the LCD monitor/viewfinder screen to the output signal from the VIDEO OUT connector. **Note** On the thumbnail, EXPAND CLIP and SHOT MARK screens, the same menus and status indications as those on the LCD monitor/viewfinder screen are displayed regardless of the setting of this item.
Down Converter Selecting the operation mode of the down converter	**Squeeze** / Letterbox / Edge Crop	Set the output mode (aspect) for SD signals Squeeze: To horizontally reduce a 16:9 picture to output a 4:3 picture Letterbox: To mask the upper and lower areas of a 4:3 picture to display a 16:9 picture in the center of the screen Edge Crop: To cut the both sides of a 16:9 picture to output a 4:3 picture
23.98P Output Selecting Output mode	**59.94i (2-3 Pull Down)**/ 23.98PsF	Select the video output format when the video format is HQ 1920/23.98P or HQ 1440/23.98P (invalid with video formats other than HQ 1920/23.98P and HQ 1440/23.98P).
Dual-Link & Gamma Select Setting the dual-link output	**Off** / 1.5G YPbPr422 & Video	Set the output from the HD SDI A/B connectors. Off: No signal output 1.5G YPbPr422 & Video: To output 1.5G Dual-Link HD-SDI signal using both the A and B connectors. **Note** The following choices become available when the CBK-RGB01 RGB and S-LOG Output Option is installed. 1.5G RGB444 & Video 1.5G RGB444 & S-Log 3G YPbPr422 & Video 3G RGB444 & Video 3G RGB444 & S-Log
S-Log LUT Setting MLUT mode for S-Log output	**Off** / On	Set the MLUT mode for S-Log output. Off: To not apply MLUT (To output original S-Log) On: To apply MLUT selected with “S-Log LUT Select” or “S-Log EI Select”

VIDEO SET		
Menu items	**Setting values**	**Contents**
S-Log LUT Select Setting the MLUT for S-Log output	Off / **P1: 709 (800%) /** P2: HG8009G40 / P3: HG8009G33 / P4: 709 (180%) / U1: 709 (180%) / U2: 709 (180%) / U3: 709 (180%) / U4: 709 (180%) / U5: 709 (180%)	Select the MLUT (Monitor Look Up Table) to be applied to the video signals with S-Log except for the signals of Dual-Link output (signals recorded on the camcorder, and signals output from the SDI output, HDMI output, Video output, and i-LINK output) Off: MLUT not applied (original S-Log is output) 709 (800%): Gamma 709 with 800% dynamic range HG8009G40: Hypergamma with 800% dynamic range HG8009G33: Hypergamma with 800% dynamic range 709 (180%): Gamma 709 with 800% dynamic range
S-Log EI Mode Setting EI mode for S-Log output	**Off** / On	Turn EI mode for S-Log output on/off.
S-Log EI Select Setting the EI MLUT for S-Log output	800EI / 1000EI / 1250EI / **1600EI /** 2000EI / 2500EI / 3200EI	When S-Log output is in EI mode, select EI MLUT (gain) to be applied to images (for internal recording on the camcorder, SDI output, HDMI output, video output, i-Link output) other than that for dual-link output. 800EI: Equivalent to 0 dB gain 1000EI: Equivalent to 2 dB gain 1250EI: Equivalent to 4 dB gain 1600EI: Equivalent to 6 dB gain 2000EI: Equivalent to 8 dB gain 2500EI: Equivalent to 10 dB gain 3200EI: Equivalent to 12 dB gain
SDI Rec Control Setting the synchronized recording	**Off** / HD SDI Remote I/F	To turn the function to enabling recording synchronized with this camcorder. HD SDI Remote I/F: To feed a REC trigger signal to a recorder connected to the SDI OUT and HD SDI A/B connectors.

LCD/VF SET Menu

LCD/VF SET		
Menu items	**Subitems and setting values**	**Contents**
LCD Adjusting the LCD monitor	Color –99 to +99 (±**0**)	Adjust the color of pictures on the LCD monitor.
	Contrast –99 to +99 (±**0**)	Adjust the contrast of pictures on the LCD monitor.
	Brightness –99 to +99 (±**0**)	Adjust the brightness of pictures on the LCD monitor.

LCD/VF SET

Menu items	Subitems and setting values	Contents
VF Setting the viewfinder	Backlight **High** / Low	Select the brightness of the viewfinder backlight.
	Mode **Color** / B&W	Select the display mode of the viewfinder in E-E Display/ Recording mode. Color: Color mode B&W: Monochrome mode
	Contrast –99 to +99 (**±0**)	Adjust the contrast of pictures on the viewfinder screen.
	Brightness –99 to +99 (**±0**)	Adjust the brightness of pictures on the viewfinder screen.
	Power **Auto** / On	Set the condition to turn the viewfinder on. Auto: To turn it on when the LCD monitor is closed or rotated to the upside-down position On: To keep it on regardless of the status of the LCD monitor
Peaking Setting the peaking function for the LCD monitor/ viewfinder	Color **White** / Red / Yellow / Blue	Select the color of the peaking signal.
	Level High / **Mid** / Low	Set the level of the peaking signal.
Marker Setting the markers added to pictures on the LCD monitor/ viewfinder screen	Setting **On** / Off	Turn all marker indications on/off in combination.
	Safety Zone **On** / Off	Turn the safety marker on/off.
	Safety Area 80% / **90%** / 92.5% / 95%	Select the size (ratio to the entire screen) of the safety zone marker.
	Center Marker **On** / Off	Turn the center marker on/off.
	Aspect Marker Line / Mask / **Off**	Select the aspect marker. Line: To show white lines Mask: To lower the video signal level of areas outside the marker range. Off: To not display
	Aspect Select **4:3** / 13:9 / 14:9 / 15:9 / 1.66:1 / 1.85:1 / 2.35:1 / 2.4:1	Select the ratio of the aspect marker.
	Aspect Mask 90% / 80% / 70% / 60% / 50% / 40% / 30% / 20% / 10% / **0%**	When “Aspect Marker” is “Mask,” select the brightness of images outside the aspect marker.
	Guide Frame On / **Off**	Turn the guide frame marker on/off.
Zebra Setting the zebra pattern	Zebra Select **1** / 2 / Both	Select the zebra pattern(s) to be displayed. 1: To display zebra 1 only 2: To display zebra 2 only Both: To display both zebra 1 and zebra 2
	Zebra1 Level 50 to 107 (**70**)	Set the display level of zebra 1.

LCD/VF SET

Menu items	Subitems and setting values	Contents
Display On/Off Selecting the items to be displayed on the LCD monitor/ viewfinder screen	Video Level Warnings **On** / Off	Turn the warning indication to be displayed when the picture is too bright or too dark on/off.
	Brightness Display On / **Off**	Turn the numeric indication to show the picture brightness on/ off.
	Histogram Display On / **Off**	Turn the histogram indication to show the level distribution of the picture on/off.
	Lens Info Meter / Feet / **Off**	Select the depth-of-field indication. Meter: To indicate in meters Feet: To indicate in feet Off: To not indicate
	Zoom Position **Number** / Bar / Off	Select the type of zoom position indication. Number: Indication with a number Bar: Indication with a bar Off: To not display
	Audio Level Meter **On** / Off	Turn the audio level meter indication on/off.
	Timecode **On** / Off	Turn the time data (timecode, user bits, duration) indication on/off.
	Battery Remain **On** / Off	Turn the battery remaining/DC input voltage indication on/ off.
	Media Remain **On** / Off	Turn the media remaining indication on/off.
	TLCS Mode **On** / Off	Turn the TLCS mode indication on/off.
	Steady Shot **On** / Off	Turn the steady shot indication on/off.
	Focus Mode **On** / Off	Turn the focus operation mode indication on/off.
	White Balance Mode **On** / Off	Turn the white balance mode indication on/off.
	Picture Profile/S-Log **On** / Off	Turn the Picture Profile indication and S-Log indication on/ off.
	Filter Position **On** / Off	Turn the ND filter setting indication on/off.
	Iris Position **On** / Off	Turn the iris setting indication on/off.
	Gain Setting **dB** / ISO / Off	Select the type of gain setting indication. dB: To indicate in dB ISO: To indicate in an ISO value Off: To not display
	Shutter Setting **On** / Off	Turn the shutter mode and speed indication on/off.
	Rec Mode **On** / Off	Turn the special recording mode (Frame Rec, Interval Rec, S&Q Motion) indication on/off.
	Video Format **On** / Off	Turn the video format indication on/off.
	5600K CC **On** / Off	Turn the electric color compensation filter indication on/off.

LCD/VF SET		
Menu items	**Subitems and setting values**	**Contents**
Display On/Off	S-Log LUT Select **On** / Off	Turn the S-Log MLUT indication on/off.
	3D-Link Mode **On** / Off	Turn the 3D-Link operation mode indication on/off when 3D-Link is enabled.
	SDI Rec Control **On** / Off	Turn the synchronized recording indication (Rec2 indication) on/off.

TC/UB SET Menu

TC/UB SET		
Menu items	**Subitems and setting values**	**Contents**
Timecode Setting the timecode	Mode **Preset** / Regen / Clock	Set the timecode mode. Preset: To start the timecode from the specified value Regen (regeneration): To continue the timecode from that of the previous clip Clock: To use the current clock time as the timecode
	Run **Rec Run** / Free Run	Set the running mode when the timecode mode is set to "Preset." Rec Run: The timecode advances only in recording mode. Free Run: The timecode keeps advancing regardless of recording.
	Setting	Set the timecode to a desired value. Select "SET" to finish the setting.
	Reset Execute / Cancel	Select "Execute" to reset the timecode to 00:00:00:00.
	TC Out **Auto** / Generator	Select the timecode output. Auto: To output the timecode generator value during recording, and the timecode reader value during playback. Generator: To output the timecode generator value during recording or playback.
Users Bit Setting the user bits	Mode **Fix** / Date	Set the user bit mode. Fix: To use a desired fixed value as the user bits Date: To use the current date
	Setting	Set the user bits to a desired value.
TC Format Setting the timecode format	**DF** / NDF	Set the timecode format. DF: Drop frame NDF: Non drop frame

LENS FILE Menu

LENS FILE		
Menu items	**Subitems and setting values**	**Contents**
Information Displaying the information for the attached lens (serial lenses only)	Lens Name	The model name of the lens is displayed.
	Manufacturer	The manufacturer of the lens is displayed.
	Serial Number	The serial number of the lens is displayed.
	Version	The version of the lens is displayed.
Operation Operating lens files	Display Mode **Date&Time** / Model Name / Lens Name	Set the mode of the display for lens file selection. Date&Time: To display the date and time when the lens files have been stored. Model Name: To display the name of the device with which the lens files have been stored. Lens Name: To display the name of the lens.
	Recall Memory Execute/Cancel	Select “Execute” to retrieve a lens file from the built-in memory.
	Store Memory Execute/Cancel	Select “Execute” to store a lens file in the built-in memory.
	Recall SxS Execute/Cancel	Select “Execute” to retrieve a lens file from an SxS memory card.
	Store SxS Execute/Cancel	Select “Execute” to store a lens file in an SxS memory card.
	File Name **No Offset**	Set the filename (max. 16 characters) of the lens file being selected. Turn the jog dial to select a character then push the dial to proceed. Selectable characters: a to z (lower case), A to Z (upper case), 0 to 9, space, and the following characters: !#$%&’()*+,-./:;<=>@[¥]~
	File Source	The file number of the file being selected is displayed.
	Auto Recall **Off** / On (Lens Name) / On (Serial Number)	Specify whether to automatically retrieve the lens file for the mounted lens that supports serial communication. Off: To not use On (Lens Name): To retrieve the lens file corresponding to the model name of the lens and reflect the contents of the file. On (Serial Number): To retrieve the lens file corresponding to the model name and serial number of the lens and reflect the contents of the file. (If the lens does not support serial number communication, the file corresponding with the model name is retrieved.)

LENS FILE		
Menu items	**Subitems and setting values**	**Contents**
Setting Performing adjustments for a lens file	Reset Setting Execute/Cancel	Select “Execute” to clear the lens compensation data to the factory-set values.
	Flare R –99 to +99 (±**0**)	Set an R flare level in the lens file.
	Flare G –99 to +99 (±**0**)	Set a G flare level in the lens file.
	Flare B –99 to +99 (±**0**)	Set a B flare level in the lens file.
	White Offset R –99 to +99 (±**0**)	Set an R white balance compensation value in the lens file.
	White Offset B –99 to +99 (±**0**)	Set a B white balance compensation value in the lens file.
	Shading R H SAW –99 to +99 (±**0**)	Set an R horizontal SAW white shading compensation value in the lens file.
	Shading R H PARA –99 to +99 (±**0**)	Set an R horizontal PARA white shading compensation value in the lens file.
	Shading R V SAW –99 to +99 (±**0**)	Set an R vertical SAW white shading compensation value in the lens file.
	Shading R V PARA –99 to +99 (±**0**)	Set an R vertical PARA white shading compensation value in the lens file.
	Shading G H SAW –99 to +99 (±**0**)	Set a G horizontal SAW white shading compensation value in the lens file.
	Shading G H PARA –99 to +99 (±**0**)	Set a G horizontal PARA white shading compensation value in the lens file.
	Shading G V SAW –99 to +99 (±**0**)	Set a G vertical SAW white shading compensation value in the lens file.
	Shading G V PARA –99 to +99 (±**0**)	Set a G vertical PARA white shading compensation value in the lens file.
	Shading B H SAW –99 to +99 (±**0**)	Set a B horizontal SAW white shading compensation value in the lens file.
	Shading B H PARA –99 to +99 (±**0**)	Set a B horizontal PARA white shading compensation value in the lens file.
	Shading B V SAW –99 to +99 (±**0**)	Set a B vertical SAW white shading compensation value in the lens file.
	Shading B V PARA –99 to +99 (±**0**)	Set a B vertical PARA white shading compensation value in the lens file.
Auto FB Adjust Adjusting the flange focal length automatically	Execute/Cancel	Select “Execute” to perform automatic adjustment of flange focal length. **Note** This item is valid only with an optional SCL-Z18X140 lens attached.

OTHERS Menu

OTHERS Menu items	Subitems and setting values	Contents
All Reset Resetting to the factory status	Execute/Cancel	Select “Execute” to reset the camcorder to the factory status.
Camera Data Storing/recalling the menu settings	Store Execute/Cancel	Select “Execute” to store the setting values in an SxS memory card.
	Recall Execute/Cancel	Select “Execute” to retrieve the setting values from an SxS memory card.
LUT Memory Storing/recalling user LUT data	Store Execute/Cancel	Select “Execute” to store five user LUT data on an SxS memory card collectively.
	Recall Execute/Cancel	Select “Execute” to recall five user LUT data from an SxS memory card collectively.
3D-Link Setting the 3D-Link mode	Mode **Off** / Main(L) / Sub(R)	Set the 3D-Link operation mode. Off: To not use 3D-Link Main(L): To specify the camcorder for the main unit (Left) Sub(R): To specify the camcorder to the sub unit (Right)
	Send Main Data Execute / Cancel	Select “Execute” to collectively copy the camera settings for the main unit to the sub unit.
ND Adjustment Setting the sensitivity of ND filter	ND Clear **0** to 999	Adjust the user adjustment value when the ND filter is set to “Clear.”
	ND 1(1/8) **0** to 999	Adjust the user adjustment value when the ND filter is set to “ND 1 (1/8).”
	ND 2(1/64) **0** to 999	Adjust the user adjustment value when the ND filter is set to “ND 2 (1/64).”
Time Zone Setting the time difference	UTC –12:00 to +14:00 (**UTC**)	Set the time-zone difference from UTC in steps of 30 minutes.
Clock Set Setting the built-in clock	Date/Time	Set the current time and date.
	12H/24H 12H / **24H**	Select the display mode of time. 12H: 12-hour mode 24H: 24-hour mode
	Date Mode **YYMMDD** / MMDDYY / DDMMYY	Select the display mode of the date. YYMMDD: In sequence of year, month, day MMDDYY: In sequence of month, day, year DDMMYY: In sequence of day, month, year
Language Selecting the language for menus and messages	**English** / Chinese / Japanese	English: To display in English Chinese: To display in Chinese Japanese: To display in Japanese **Note** “Japanese” is effective only on messages for warning and caution. The menus and status indications do not change.

OTHERS

Menu items	Subitems and setting values	Contents
Assign Button Assigning functions to the assignable buttons	<1> to <8> Off / Marker / Last Clip DEL / ATW / ATW Hold / Rec Review / Rec / Picture Cache / Freeze Mix / Expanded Focus / Spotlight / Backlight / IR Remote / Shot Mark1 / Shot Mark2 / VF Mode / BRT Disp / Histogram / Lens Info / OK Mark / One Push AF / One Push AE / LCD /VF Adjust / Send Main Data / S-Log LUT <1> **Lens Info** <2> **BRT Disp** <3> **Histogram** <4> **Rec** <5> **Rec** <6> **Off** <7> **Off** <8> **Off**	Assign a function to the ASSIGN button of the corresponding number. Off: No function Marker: For turning the markers on/off Last Clip DEL: For deleting the last recorded clip ATW: For turning ATW on/off ATW Hold: For holding the ATW value Rec Review: For starting a Rec Review Rec: For starting/stopping recording Picture Cache: For turning picture caching on/off Freeze Mix: For executing Freeze Mix Expanded Focus: For turning Expanded Focus on/off Spotlight: For selecting TLCS Spotlight mode Backlight: For selecting TLCS Backlight mode IR Remote: For activating/deactivating the IR Remote Commander Shot Mark1: For adding shot mark 1 (HD mode only) Shot Mark2: For adding shot mark 2 (HD mode only) VF Mode: For switching between color and monochrome modes of the viewfinder BRT Disp: For turning the brightness level indication on/off Histogram: For turning the histogram indication on/off Lens Info: For turning the depth-of-field indication on/off OK Mark: For adding an OK mark (HD mode only, not valid in thumbnail display/playback status) One Push AF: For activating One Push Auto Focusing (valid only when a lens which supports focus control is attached) One Push AE: For activating One Push Auto Iris (valid only when a lens which supports iris control is attached) LCD/VF Adjust: For turning the brightness/contrast level bar indication on/off Send Main Data: For collectively copying the camera settings of the main unit to the sub unit S-Log LUT: For turning the MLUT function for S-Log output on/off
Tally Setting the tally lamps	Front **High** / Low / Off	Set the brightness of the tally lamp on the front. High: To brighten the lamp Low: To dim the lamp Off: To not light the lamp
	Rear **On** / Off	Turn the tally lamp on the rear on/off.
Hours Meter Displaying the hours meter	Hours (Sys)	The non-resettable accumulated time of use is displayed.
	Hours (Reset)	The resettable accumulated time of use is displayed.
	Reset Execute/Cancel	Select “Execute” to reset the Hours (Reset) value to 0.
IR Remote Activating/ deactivating the Remote Commander	On / **Off**	Set to “On” to activate remote control operations from the supplied IR Remote Commander. **Note** The setting automatically returns to “Off” when the camcorder is turned off.

OTHERS		
Menu items	**Subitems and setting values**	**Contents**
Battery Alarm Setting the low power alarm	Low BATT 5% / **10%** / 15% / ... / 45% / 50%	Set the battery level at which the Low BATT warning is generated (in steps of 5%).
	BATT Empty **3%** to 7%	Set the battery level at which the BATT Empty warning is generated.
	DC Low Volt1 **11.5 V** to 17.0 V	Set the DC IN voltage at which the DC Low Volt1 warning is generated.
	DC Low Volt2 **11.0 V** to 14.0 V	Set the DC IN voltage at which the DC Low Volt2 warning is generated.
Battery INFO Showing information regarding the battery pack (display only)	Type	The type (product name) is displayed.
	MFG Date	The date of manufacture is displayed.
	Charge Count	The accumulated number of times of charge/discharge is displayed.
	Capacity	The estimated total capacity of full charge is displayed.
	Voltage	The current output voltage is displayed.
	Remaining	The current remaining level is displayed.
Genlock Setting Genlock operation	H Phase (HD) –999 to +999 (±**0**)	Set the H phase (phase of the horizontal sync signal) of HD signal for genlock operation.
	H Phase (SD) –999 to +999 (±**0**)	Set the H phase (phase of the horizontal sync signal) of SD signal for genlock operation.
Trigger Mode Setting whether to trigger recording start/stop for an external device connected to via the i.LINK(HDV/DV) connector	Internal / **Both** / External	Internal: To activate recording start/stop operations only for an SxS memory card in a built-in slot. Both: To activate recording start/stop operations both for an SxS memory card in a built-in slot and the external recording device connected via the i.LINK(HDV/DV) connector. External: To activate recording start/stop operations only for the external recording device connected via the i.LINK(HDV/DV) connector.

OTHERS		
Menu items	**Subitems and setting values**	**Contents**
System	Country **NTSC Area** / NTSC(J) Area / PAL Area	Select the area of use and setup ON/OFF. NTSC Area: Setup ON NTSC(J) Area: Setup OFF PAL Area: Setup OFF
	HD/SD **HD** / SD	Switch between HD mode and SD mode for recording/playback. Select “Execute” to switch.
	Video Format **HD mode** Country: NTSC Area/ NTSC(J) Area **HQ 1920/59.94i** HQ 1920/29.97P HQ 1920/23.98P HQ 1440/59.94i HQ 1440/29.97P HQ 1440/23.98P SP 1440/59.94i SP 1440/23.98P HQ 1280/59.94P HQ 1280/29.97P HQ 1280/23.98P Country: PAL Area **HQ 1920/50i** HQ 1920/25P HQ 1440/50i HQ 1440/25P SP 1440/50i HQ 1280/50P HQ 1280/25P **SD mode** Country: NTSC Area/ NTSC(J) Area **DVCAM59.94i SQ** DVCAM59.94i EC DVCAM29.97P SQ DVCAM29.97P EC Country: PAL Area **DVCAM50i SQ** DVCAM50i EC DVCAM25P SQ DVCAM25P EC	Select the video format for recording. **HD mode** • Bit rate HQ or SP • Horizontal resolution 1920, 1440, or 1280 • Frame rate 23.98, 25, 29.97, 50, or 59.94 • Scan system i (interlace) or P (progressive) **SD mode** • Frame rate 25, 29.97, 50, or 59.94 • Scan system i (interlace) or P (progressive) • Aspect SQ (Squeeze) or EC (Edge Crop)

OTHERS		
Menu items	**Subitems and setting values**	**Contents**
Clip Setting for clip name or deletion	Auto Naming Title / **Plan**	Select the method to specify clip names. Title: To specify as desired by “Title Prefix” Plan: To use a name specified in planning metadata (if no name is specified in planning metadata, the name specified by “Title Prefix” is used.)
	Title Prefix **nnn_** (nnn=least three digits of the serial number) (Max. 7 characters displayed)	Call the Character Set screen to set the title part (4 to 46 characters) of the clip names. **Configuration of the Character Set screen** Character selection area (3 lines): To select a character to insert in the cursor position of the Title Prefix area. !#$%()+,-.=@[]^_~0123456789 abcdefghijklmnopqrstuvwxyz ABCDEFGHIJKLMNOPQRSTUVWXYZ Cursor operation area (1 line): Space: To change the character in the cursor position to a space INS: To insert a space in the cursor position DEL: To delete a character in the cursor position ←: To move the cursor to the left →: To move the cursor to the right ESC: To cancel the change and exit the Character Set screen END: To validate the change and exit the Character Set screen Title Prefix area (1 line): For entering the title **To set the title** *1* Turn the jog dial to select (highlight) a character in the character selection area to be entered in the cursor position of the Title Prefix area. Then press the jog dial. (The selected character is entered and the cursor moves to the right.) *2* Repeat step 1 for setting the title. (Use Space, INS, and DEL as required.) *3* When the title setting is completed, select END to exit the Character Set screen.
	Number Set 0001 to 9999	Set the 4-numeric part of the clip name.
	Update Media(A) / Media(B)	To update the managerial file on the SxS memory card in the selected slot.[1)] (Select “Execute” on the confirmation screen to begin.)
	Last Clip DEL Execute / Cancel	Select “Execute” to delete the last recorded clip.
	All Clips DEL Execute / Cancel	Select “Execute” to delete all clips on the active SxS memory card. **Note** Clips to which you applied OK mark cannot be deleted.

OTHERS		
Menu items	**Subitems and setting values**	**Contents**
Copy All [2)] Setting for collective copy of clips and/or General files	Clips	To copy all clips on an SxS memory card to the other. (Select “Execute” on the confirmation screen to begin.)
	General Files	To copy all files in the General folder on an SxS memory card to the other. (Select “Execute” on the confirmation screen to begin.)
	Clips&General	To copy all clips and files in the General folder on an SxS memory card to the other. (Select “Execute” on the confirmation screen to begin.)
Plan.Metadata Setting planning metadata	Load/Slot(A) Execute / Cancel	To load planning metadata from the SxS memory card in slot A. Selecting “Execute” displays the list of the planning metadata files stored on the SxS memory card in slot A. Specify a file, select “Load” then “Execute” for loading.
	Load/Slot(B) Execute / Cancel	To load planning metadata from the SxS memory card in slot B. Selecting “Execute” displays the list of the planning metadata files stored on the SxS memory card in slot B. Specify a file, select “Load” then “Execute” for loading.
	Properties Execute / Cancel	Select “Execute” to display the detailed information of the planning metadata loaded in the camcorder.
	Clear Execute / Cancel	Select “Execute” to clear the planning metadata loaded in the camcorder.
	Clip Name Disp **Title1 (ASCII)** / Title2 (UTF-8) / Off	Select the display mode of the clip name specified in planning metadata. Title1 (ASCII): Clip name in ASCII format Title2 (UTF-8): Clip name in UTF-8 format Off: To not display the clip name
Network Setting for network connections **Note** The CBK-WA01 Wi-Fi Adapter and installation of the CBK-RGB01 RGB and S-LOG Output Option are required.	DHCP Enable / **Disable**	Select whether to acquire the IP address automatically from a DHCP server (Enable) or not (Disable).
	IP Address 0.0.0.0 to 255.255.255.255 (**192.168.1.10**)	Set the IP address when “DHCP” is set to “Disable.”
	Subnet Mask 0.0.0.0 to 255.255.255.255 (**255.255.255.0**)	Set the subnet mask when “DHCP” is set to “Disable.”
	Default Gateway 0.0.0.0 to 255.255.255.255 (**0.0.0.0**)	Set the default gateway when “DHCP” is set to “Disable.”
	User Name (**admin**)	Set a desired user name in 1 to 31 alphanumeric characters.
	Password (**pmw-f3**)	Sets a password in 0 to 31 alphanumeric characters. **Note** The password is displayed as “ * ”.
	Set Execute / Cancel	Confirms the “Network”settings. Select “Execute” to confirm.
	MAC Address	Display the MAC address.
	Net Config Reset Execute / Cancel	Reset the “Network” settings to the preset values. Select “Execute” to reset.

OTHERS

Menu items	Subitems and setting values	Contents
Wi-Fi Setting for Wi-Fi connection **Note** The CBK-WA01 Wi-Fi Adapter and installation of the CBK-RGB01 RGB and S-LOG Output Option are required.	Scan Networks Execute / Cancel	Scan the available network connections when "Wi-Fi" is set to "Enable."
	SSID (Network connection name display) Reset	Reset the network connection name to the default settings.
	Network Type Infra / **Adhoc**	Select the connection mode. Infra: Infrastructure mode Adhoc: Ad hoc mode
	Ch **1** to 11	Set the wireless channel when "Network Type" is "Adhoc."
	Authentication When "Network Type" is "Infra" **Open** / Shared / WPA / WPA2 When "Network Type" is "Adhoc" **Open** / Shared	Select the network authentication. Open: Open system authentication Shared: Shared key authentication WPA: WPA (Wi-Fi Protected Access) authentication WPA2: WPA2 (Wi-Fi Protected Access 2) authentication
	Encryption When "Authentication" is "Open" or "Shared" **Disable** / WEP When "Authentication" is "WPA" or "WPA2" **Disable** / TKIP / AES	Select the type of data encryption. Disable: Do not apply data encryption. WEP: Apply WEP (Wired Equivalent Privacy) TKIP: Apply TKIP (Temporal Key Integrity Protocol) AES: Apply AES (Advanced Encryption Standard)
	WEP Key Index **1** / 2 / 3 / 4	Select the key index when "Encryption" is "WEP."
	Input Select When "Encryption" is "WEP" **ASCII5** / ASCII13 / HEX10 / HEX26 When "Encryption" is "TKIP" or "AES" ASCII8-63 / HEX64	Select the input format depending on the network key (or security key). ASCII5: Five characters ASCII format ASCII13: 13 characters ASCII format HEX10: 10 hexadecimal digits HEX26: 26 hexadecimal digits ASCII8-63: 8 to 63 characters ASCII 8-bit format HEX64: 64 hexadecimal digits (characters)
	Key (network key)	Set the network key (or security key).
	Set Execute / Cancel	Confirm the "Wi-Fi" settings when "Wi-Fi" is set to "Enable." Select "Execute" to confirm.
	Wi-Fi Status ■ ■ ■ Connecting (display only)	Display "Connecting" while connection is being attempted. Display black squares to show the connection status by the number of squares during communication.
	Wireless Mode 802.11b / 802.11g / 802.11n	Display an IEEE802.11 standard.
	Wi-Fi Enable / **Disable**	Select whether to enable or disable Wi-Fi connection.
Option Displaying options	RGB / 3DL / RGB 3DL	The option(s) available with this camcorder is(are) displayed. RGB: Only the CBK-RGB01 RGB and S-LOG Output Option installed 3DL: Only the CBK-3DL01 3D-Link Option installed RGB 3DL: Both the CBK-RGB01 RGB and S-LOG Output Option and the CBK-3DL01 3D-Link Option installed

OTHERS		
Menu items	**Subitems and setting values**	**Contents**
InstallOption Installing options	Execute / Cancel	Install options. If you select “InstallOption,” the password entry screen is displayed. Enter a 4-digit number and press the jog dial. A confirmation screen appears. Select “Execute” to begin installation. *For details, refer to the Operating Instructions supplied with the option to be installed.*
Remove Option Moving options	RGB	Move the installed RGB and S-LOG Output Option to an SxS memory card. If you select “Remove Option” and specify the option name to be moved, the password entry screen is displayed. Enter the 4-digit number set for InstallOption and press the jog dial. A confirmation screen appears. Select “Execute” to begin moving of the option key. *For details, refer to the Operating Instructions supplied with the CBK-RGB01.*
	3DL	Move the installed 3D-Link Option to an SxS memory card. The operation is the same as that for “RGB” above. *For details, refer to the Operating Instructions supplied with the CBK-3DL01.*
Menu Scroll Setting the menu scroll operation	**Normal** / Loop	Select the method for menu scrolling. Normal: The cursor moves and stops at the top or the bottom. Loop: The cursor continues moving up (jumping from the top to the bottom) or down (jumping from the bottom to the top).
Format Media Formatting SxS memory cards	Media (A) Execute / Cancel	Select “Execute” to format the SxS memory card in slot A.
	Media (B) Execute / Cancel	Select “Execute” to format the SxS memory card in slot B.
Version Showing the version of this unit	Vx.xx	The current software version of the camcorder is displayed.
Version Up Updating this unit	Execute / Cancel	Use when updating of the camcorder is required. Select “Execute” to begin. **Note** This item cannot be selected when no SxS memory card has been loaded.

1) If recording/playback cannot be made with an SxS memory card because it has been operated with a device other than this camcorder, or for some other reason, updating the managerial file on the card may improve the situation.

2) When you copy an SxS memory card including multiple clips and files to another card with the same capacity, all the clips and files may not be copied completely to the end, depending on the usage conditions or memory properties.

Setup File

You can store all the menu settings (including picture profiles) as a setup file on an SxS memory card.
By retrieving the stored setup file, the proper setup condition can be immediately obtained.
For the setup file operations, use “Camera Data” of the OTHERS menu.

Note

The Clock Set, Time Zone, Hours Meter values are excluded.

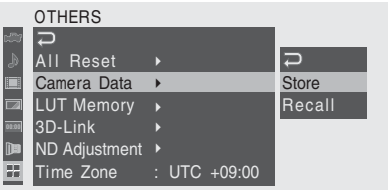
Storing the Setup File

Only one setup file can be stored on one SxS memory card.

1 Insert a memory card on which you wish to store the setup file to a card slot.

Check that the corresponding memory card icon is displayed on the screen. If a memory card in the other slot is selected, press the SLOT SELECT button to switch.

2 Select “Camera Data” from the OTHERS menu.



3 Select “Store.”

“Cancel” and “Execute” appear to the right.

4 Select “Execute.”

Writing of data to the memory card begins.
An in-progress message is displayed during writing. When writing is completed, a completion message is displayed.

Notes

- If a setup file already exists on the memory card you specified in Step 1, a message to confirm whether to overwrite the file is displayed.
- If there is not sufficient space on the memory card, an error message is displayed.
- If the user LUT data are large, the setup file is stored without the user LUT data. In this case, the message “Done (Without LUT data)” is displayed.

Retrieving the Setup File

When you retrieve the stored setup file, the camcorder settings are changed according to the file.

1 Insert the memory card on which you stored the setup file into a card slot.

Check that the corresponding memory card icon is displayed on the screen. If a memory card in the other slot is selected, press the SLOT SELECT button to switch.

2 Select “Camera Data” from the OTHERS menu.

3 Select “Recall.”

“Cancel” and “Execute” appear to the right.

4 Select “Execute.”

Reading of data from the memory card begins.
An in-progress message is displayed during data reading. When the read-out is completed, a completion message is displayed, indicating that the camcorder settings have been changed according to the setup file.

Resetting to the Standard Values

The current camcorder settings you made through various menu and button operations can be collectively returned to the standard statuses (factory settings) by executing “All Reset” of the OTHERS menu.

Lens Files

This camcorder can save the setting data used to compensate for lens characteristics, such as flare, white shading, and white balance, as lens files. The optimum compensation can be easily made merely by retrieving the appropriate file upon lens replacement.
You can save up to 32 lens files in the camcorder's built-in memory and up to 64 lens files on an SxS memory card.

Data stored as lens files

Item	Contents
Flare R	Flare levels
Flare G	
Flare B	
White Offset R	White balance compensation values
White Offset B	
Shading R H SAW	White shading compensation values
Shading R H PARA	
Shading R V SAW	
Shading R V PARA	
Shading G H SAW	
Shading G H PARA	
Shading G V SAW	
Shading G V PARA	
Shading B H SAW	
Shading B H PARA	
Shading B V SAW	
Shading B V PARA	

Saving a Lens File

You can set the compensation data in a lens file using the LENS FILE menu.

1 Mount a lens for which you wish to store the compensation data in a file.

2 Turn on the camcorder by setting the power switch to ON.

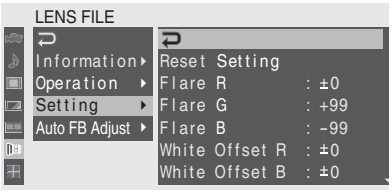
3 To save the lens file to an SxS memory card, first insert the card into a memory card slot.

Check that the memory card icon corresponding to the slot is displayed on the LCD monitor/ viewfinder screen. If the icon of the other slot is displayed, press the SLOT SELECT button to switch.

4 Adjust the white balance.

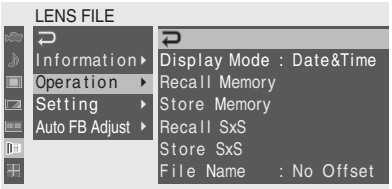
5 Press the MENU button to set the camcorder to Menu mode and select the LENS FILE menu with .

6 Select "Setting" and set the compensation values.



The compensation data you set can be cleared to the factory-set values by selecting "Reset Setting."

7 When the adjustments are finished, select "Operation."



8 To assign a specific name (max. 16 characters) for the data, select "File Name" and specify the name.

Turn the jog dial to select a character then press the dial to move the cursor to the next column. Pressing the dial at "SET" registers the name you set.

9 Select "Store Memory" or "Store SxS."

Select "Store Memory" to store the data in the built-in memory or "Store SxS" to store them in an SxS memory card.

10 Select "Execute."

A list of lens files appears. File numbers where "No File" is displayed are empty file numbers.

11 Select the file number under which you wish to save the data then press the jog dial.

A confirmation message appears.

12 Select "Execute."

If you have selected "Store SxS" in step **9**, the access lamp lights when you execute the save. When the data has been saved to the SxS memory card, a completion message appears and the access lamp goes dark.

Retrieving Lens Files

To load a lens file from an SxS memory card, insert the SxS memory card into a memory card slot then proceed as follows:

1 Select "Operation" from the LENS FILE menu.

2 Select "Recall Memory" or "Recall SxS."

Select "Recall Memory" to load the data from the built-in memory or "Recall SxS" to load them from an SxS memory card.

3 Select "Execute."

A list of lens files appears.
The display mode of the list can be changed with "Display Mode."

4 Select the desired file number then press the jog dial.

A confirmation message appears.

5 Select "Execute."

If you have selected "Recall SxS" in step **2**, the access lamp lights. When the specified lens file has been loaded from the SxS memory card, a completion message appears and the access lamp goes dark.

Automatic Retrieval of a Lens File

When you are using a lens that supports serial communication, you can set up the camcorder by automatically loading the lens file that corresponds to the lens settings (Lens Auto Recall function).

To use the Lens Auto Recall function, set "Auto Recall" under "Operation" of the LENS FILE menu to one of the following:

On (Lens Name): Load the lens file that corresponds to the model name.

On (Serial Number): Load the lens file that corresponds to the model name and serial number if the lens supports communication of the serial number. (If the lens does not support communication of the serial number, the lens file that corresponds to the model name will be loaded with either setting.)

Connecting External Monitors and Recording Device

To display recording/playback pictures on an external monitor, select the output signal and use an appropriate cable for the monitor to be connected.
Output signal from the camcorder can be recorded when a recording device is connected.
Regardless of whether the signal is HD or SD, the same status information and menus can be displayed on the external monitor as those on the LCD monitor/viewfinder screen.
According to the signal fed to the monitor, set "SDI/HDMI Out Display" or "Video Out Display" of the VIDEO SET menu *(page 118)* to "On."
When outputting SD signals in HD mode, select in advance the output mode (Squeeze, Letterbox, or Edge Crop) with "Down Converter" *(page 119)* of the VIDEO SET menu.

Note

SD signals down-converted for output have the following restrictions:
Images of 50P/50i/25P are output as PAL signals, those of 59.94P/59.94i/29.97P are output as NTSC signals, and those of 23.98P are output as 2-3 pulled-down NTSC signals.

SDI OUT connector (BNC type)

The connector is set at the factory to output an HD SDI signal.
When you set the camcorder to SD mode, the connector outputs an SD SDI signal.
Using "SDI/HDMI/i.LINK I/O Select" *(page 118)* of the VIDEO SET menu, you can change the setting so that it outputs down-converted SD SDI signal for monitoring even in HD mode.
Use a commercially available 75-ohm coaxial cable for connection.

To start recording on an external device in synchronization

With HD SDI signal output selected, synchronized recording is possible by feeding a REC trigger signal to an external recording device connected via the SDI OUT connector. To enable synchronized recording, set "SDI Rec Control" *(page 120)* of the VIDEO SET menu to "HD SDI Remote I/F."

To display the menus and status information on the connected monitor

Set "SDI/HDMI Out Display" *(page 119)* of the VIDEO SET menu to "On."

Note

No signal is fed out from the SDI OUT connector when "SDI/HDMI/i.LINK I/O Select" of the VIDEO SET menu is at any setting other than "HD SDI" or "SD SDI," enabling the HDMI OUT connector and the i.LINK (HDV/DV) connector.

HDMI OUT connector (Type A connector)

Signal output from this connector is enabled by setting "SDI/HDMI/i.LINK I/O Select" *(page 118)* of the VIDEO SET menu.
In HD mode, you can select HD HDMI, SD HDMI interlace, or SD HDMI Progressive output.
In SD mode, only an SD HDMI interlace signal can be output.
Use a commercially available HDMI cable for connection.

To display the menus and status information on the connected monitor

Set "SDI/HDMI Out Display" *(page 119)* of the VIDEO SET menu to "On."

VIDEO OUT connector (BNC type) and AUDIO OUT CH-1/CH-2 connectors (RCA phono jacks)

The VIDEO OUT connector outputs HD-Y signals in HD mode or down-converted SD analog composite signals for monitoring in SD mode.
Use a commercially available BNC cable for connection.
Audio signals are connected via the AUDIO OUT connectors with a commercially available audio cables.

To display the menus and status information on the connected monitor

Set "Video Out Display" *(page 119)* of the VIDEO SET menu to "On."

HD SDI A/B (Dual-Link) connectors (BNC type)

Dual-link output from the HD SDI A/B connectors can be enabled by setting "Dual-Link & Gamma Select" *(page 119)* of the VIDEO SET menu to "1.5G YPbPr422 & Video." Camera images can be displayed on a video monitor that supports Dual-Link connection.
When the CBK-RGB01 RGB and S-LOG Output Option is installed, 1.5G RGB444, 3G YPbPr422 and 3G RGB444 signals can also be output.
Use commercially available BNC cables for connection.

For details on the output formats, refer to the Supplement in the supplied CD-ROM labeled "Manuals for Solid-State Memory Camcorder."

Notes

- When the SDI output setting is changed, the sync signal for Dual-Link outputs may become discontinuous.
- When outputting signals from the HD SDI A/B connectors, use the BP-U60 battery pack or supply power via the DC IN connector.

i.LINK (HDV/DV) connector (IEEE1394, 4-pin)

Input/output of an HDV or DVCAM stream can be enabled by changing the "SDI/HDMI/i.LINK I/O Select" *(page 118)* setting of the VIDEO SET menu.
A monitor or VTR that supports i.LINK can be connected.

For details on i.LINK connection, see "Connecting an External Device (i.LINK Connection)" on page 141.

Operating Clips With a Computer

The clips recorded on SxS memory cards with this camcorder can be controlled on a computer or edited using the optional nonlinear editing software.
For these purposes, the clips on an SxS memory card can be operated by directly loading the card in a computer or by connecting the camcorder or the optional SBAC-US10 SxS Memory Card USB Reader/Writer to the computer, using an USB cable as shown below.

Using the ExpressCard slot of a computer

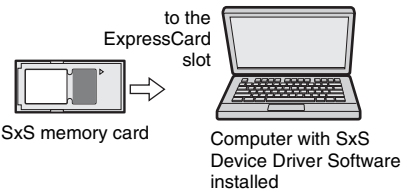
If the computer is equipped with an ExpressCard/34 or ExpressCard/54 slot, you can directly insert the SxS memory card containing clips recorded with this camcorder and access to the files.

For the operating requirements for the computer, see "Using the CD-ROM" on page 15.

Note

The SxS Device Driver Software on the CD-ROM supplied with the camcorder must be installed on your computer.

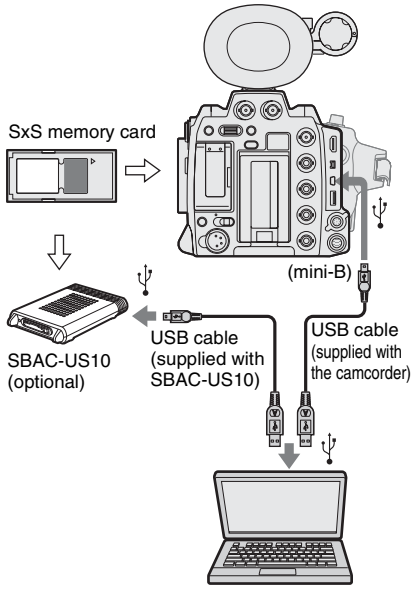
For information on installation of the driver, refer to the ReadMe on the supplied CD-ROM.
For support information for the driver, visit the following URL:
http://www.sony.net/SxS-Support/



With a Windows computer, check that a Removable Disk appears in My Computer. This indicates normal status.
With a Macintosh computer, an icon is displayed on the menu bar.

Connecting with a USB cable

When you connect the camcorder or the SBAC-US10 SxS Memory Card USB Reader/Writer (optional) using the USB cable, the memory card in the slot is acknowledged as an extended drive by the computer.
When two memory cards are mounted in this camcorder, they are acknowledged as two independent extended drives by the computer.



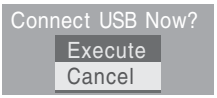
Notes

- When connecting the USB cable to the computer, be careful to check the form and direction of the USB connector.
- The camcorder and the SBAC-US10 do not work on the bus power from the computer. Supply the operating power independently.

Checking the connection to the camcorder

1 Turn the camcorder on.

A message prompting you to confirm that you wish to enable the USB connection is displayed on the LCD monitor/viewfinder screen.



Note

This message will not be displayed while another confirmation message or in-progress message (e.g., for formatting or restoration of an SxS memory card) is shown on the screen. It appears when formatting or restoration is completed.
The message is also not displayed while the CLIP INFO screen is shown on the screen. It appears when an operation on the CLIP INFO screen is completed or you return to the thumbnail screen.

2 Select "Execute" by operating the jog dial.

The screen displays the following:

3 With Windows, check that the memory card is displayed as a removable disk in My Computer.
With Macintosh, check that a "NO NAME" or "Untitled" folder was created on the desktop.

This indicates that the connection is active. (The folder name on the desktop of the Macintosh computer can be changed as needed.)

Note

The following operations must be eliminated when the access lamp is lit in red.

- Turning the power off or disconnecting the power cord
- Removing the SxS memory card
- Disconnecting the USB cable

When using the SBAC-US10, refer to the operating instructions of the SBAC-US10.

Removing an SxS memory card

Windows

1. Click on the icon of “Safely Remove Hardware” on the task bar of the computer.
2. Select “Safely remove SxS Memory Card - Drive(X:)” from the displayed menu.
3. Check that the Safe To Remove Hardware message appears then remove the card.

Macintosh

Drag the SxS memory card icon on the desktop to Trash.
If the SxS memory card icon is located on Finder, click on the eject icon on its side.

Note

Do not select “Card Power Off” from the SxS memory card icon displayed on the menu bar.

Using the supplied application software

To copy clips to the local disk of a computer, the dedicated application software in the supplied CD-ROM must be used. Install the software to your computer.
Although the data regarding recorded materials are stored over multiple files and folders, you can easily handle the clips without considering such data and directory structure by using the dedicated application software.

Note

If you operate, e.g. copy the clips on the SxS memory card by using the Explorer (Windows) or Finder (Macintosh), the subsidiary data contained by the clips may not be maintained. To avoid such a problem, use the dedicated application software.

For the operating requirements, installation and operations, visit the web sites shown in “XDCAM EX web sites” on page 14 or refer to the User’s Guide contained in the CD-ROM.

For support information on the dedicated application software, visit the web sites shown in “XDCAM EX web sites” on page 14 or on the cover page of the supplied CD-ROM.

Using a nonlinear editing system

For a nonlinear editing system, optional editing software that corresponds to the recording formats used with this camcorder is required.

Store the clips to be edited on the HDD of your computer in advance, using the dedicated application software (supplied).
Some editing software may not operate properly. Be sure to confirm before use that it conforms to the recording formats used with this camcorder.

To use Final Cut Pro of Apple Inc.

It is necessary to convert the clips to files that can be edited with the Final Cut Pro.

For information on the application software to be used to transfer, visit the web sites shown in “XDCAM EX web sites” on page 14 or on the cover page of the supplied CD-ROM.

Connecting an External Device (i.LINK Connection)

When an HDV-compatible video format (SP 1440/59.94i, SP 1440/50i, or SP 1440/23.98P) or a DVCAM-compatible video format (format of SD mode) is selected, setting "SDI/HDMI/i.LINK I/O Select" *(page 118)* of the VIDEO SET menu to a setting that includes "HDV" or "DVCAM" enables signal inputs/outputs via the i.LINK(HDV/DV) connector.
You can record the same images as those recorded on an SxS memory card in this camcorder on an external device connected to the i.LINK(HDV/DV) connector, or record playback pictures (HDV streams) of the external device on the memory card in the camcorder.
For playback, DVCAM streams of 16-bit 2-channel lock audio are acceptable.
Nonlinear editing conforming to the HDV format is also enabled.

Notes

- DVCAM streams cannot be recorded with the camcorder.
- When "SDI/HDMI/i.LINK I/O Select" of the VIDEO SET menu is set to a setting that includes "HDV" or "DVCAM," no signal is output from the SDI OUT connector and Slow&Quick Motion mode cannot be used.
- Use the i.LINK(HDV/DV) connector only for one-to-one i.LINK connection.
- When you change a setting which affects output signals from the i.LINK(HDV/DV) connector, such as "System" of the OTHERS menu, "SDI/HDMI/i.LINK I/O Select," or "Down Converter" of the VIDEO SET menu, disconnect the i.LINK cable then change the setting. Changing such a setting with the i.LINK cable connected may cause improper operation of the connected i.LINK device.

Recording the Camcorder Picture on an External Device

When you set the camcorder to E-E Display/Recording mode, the picture being shot with this camcorder is output as an HDV or DVCAM stream via the i.LINK(HDV/DV) connector. It can be recorded on a connected HDV or DVCAM recorder in synchronization with your recording start/stop operation on this camcorder.

1 Perform the preparatory settings of the camcorder.

- Set "SDI/HDMI/i.LINK I/O Select" *(page 118)* of the VIDEO SET menu to a setting that includes "HDV" or "DVCAM."
  HDV: To output an HDV stream when you set the video format to SP 1440/59.94i, SP 1440/50i, or SP 1440/23.98P in HD mode
  DVCAM: To output a DVCAM stream in SD mode
- Set "Trigger Mode" *(page 128)* of the OTHERS menu to "Both" or "External."
  Both: To record both on the memory card in the camcorder and on the external device
  External: To record only on the external device

2 Set the external device to recording standby status.

For operations of the external device, refer to the operation manual of that device.

3 Start recording on the camcorder.

The external device starts recording in synchronization.

The status of the external device is displayed in the i.LINK status indication area *(page 22)* on the LCD monitor/viewfinder screen.

Indication	Status of the external device
STBY i.HDV	In HDV recording standby
●REC i.HDV	In HDV recording
STBY i.DV	In DV recording standby
●REC i.DV	In DV recording

Notes

- Operation may be different depending on the type of external device.
- There is some time lag from when you start recording on this camcorder until the i.LINK status indication changes. Video and audio recordings do not start on the connected i.LINK

device before it enters synchronization even if "Trigger Mode" is set to "Both."
- While you can record shot marks on the memory card during recording, they are not added to the pictures recorded on the external device.

Nonlinear Editing

You can transfer an HDV stream to a nonlinear editing system connected via the i.LINK(HDV/DV) connector.

Notes

- The i.LINK(HDV/DV) connector of this camcorder is a 4-pin connector. Check the number of pins of the i.LINK connector on your computer and use an appropriate i.LINK cable.
- In searching pictures of this camcorder on the computer, it may take some time until the display is reflected on the computer.
- If the playback clip is short or the playback starting point is near the end of the clip, the i.LINK signal may be interrupted between the clip and the next clip. When you try to capture such a signal using the nonlinear editing system, a malfunction may occur, depending on the nonlinear editing software in use.
- If you specify a search speed other than 4, 15, or 24 times normal with the nonlinear editing system, no i.LINK signal is fed out. In such a case, the picture on the LCD monitor may stay frozen.
- High-speed playback picture may not be displayed on the computer screen, depending on the nonlinear editing software in use.

Setting on this camcorder

Set "SDI/HDMI/i.LINK I/O Select" *(page 118)* of the VIDEO SET menu to a setting that includes "HDV" or "DVCAM."

For operations of the nonlinear editing software, refer to the operation manual of the software.

Recording External Input Signals

The HDV stream input from a device connected via the i.LINK (HDV/DV) connector can be recorded on an SxS memory card in this camcorder.
The timecodes superimposed on the i.LINK input are recorded regardless of the settings of the camcorder.

Note

DVCAM streams cannot be recorded.

1 Set the external signal to a format that can be recorded on the camcorder.

Signals of 1440 × 1080/59.94i can be recorded when the video format *(page 43)* is set to SP 1440/59.94i or SP 1440/23.98P. Signals of 1440 × 1080/50i can be recorded when set to SP 1440/50i.
Recording is not allowed with other combinations of the video format and input signals.

2 Select a setting that enables HDV stream input/output for "SDI/HDMI/i.LINK I/O Select" *(page 118)* of the VIDEO SET menu.

3 Set "Input Source Select" *(page 118)* of the VIDEO SET menu to "i.LINK."

The input image is displayed on the LCD monitor/viewfinder screen and the monitor connected via the VIDEO OUT connector. The audio signal is output from the built-in speaker (or headphones connected to the headphone jack) and the speaker of the device connected to the AUDIO OUT connector.

4 Press the REC START/STOP button on the handle.

Recording begins.

Notes

- The REC START/STOP button on the grip does not function.
- An error is generated in the following cases. In such a case, cancel Recording mode by pressing the REC START/STOP button on the handle.
  —The video format of input signal does not match that specified on the camcorder.
  —A copy-protected stream is being fed in.
- If the input to the camcorder becomes no signal during recording, the tally lamps and the i.LINK ●REC status indication on the LCD monitor/viewfinder screen flash, indicating that no signal is being recorded on the SxS memory card.
  When an input signal is resumed, recording is restarted, incrementing the clip number on the memory card.

About i.LINK

This section explains the specifications and features of i.LINK.

What is i.LINK?

i.LINK is a digital serial interface designed to integrate devices equipped with i.LINK connectors. i.LINK allows your device to:

- Perform two-way transmission and reception of data such as digital audio and digital video signals.
- Control other i.LINK devices.
- Easily connect multiple devices with a single i.LINK cable.

Your i.LINK device is capable of connecting to a wide range of digital AV devices for data transfer and other operations.
Other advantages include the following feature.
When connected to multiple i.LINK devices, your i.LINK device can perform data transfer and other operations not only with the directly connected devices but also with any of the devices that are connected to those devices. Therefore, you do not need to be concerned with device connection order.
However, depending on the features and specifications of the connected devices, you may need to use certain functions differently, and you may not be able to transfer data or perform certain operations.

i.LINK, a nickname for IEEE 1394 proposed by Sony, is a trademark supported by many companies worldwide.
IEEE 1394 is an international standard defined by IEEE, the Institute of Electrical and Electronics Engineers, Inc.

Note

The camcorder can be connected to one device with the i.LINK cable (DV cable). When you connect with a device that has two or more i.LINK connectors, refer to the operating instructions supplied with the connected device.

About data transfer speed of i.LINK

i.LINK defines a maximum data transfer speed of approximately 100, 200 and 400 Mbps[1)] that are described as S100, S200 and S400 respectively. For i.LINK devices, a maximum data transfer speed that the device supports is identified on "Specifications" page of the operating instructions supplied with the device or near its i.LINK connector.

1) When connecting with the device that support different data transfer speed, the actual data transfer speed may be different from those described on the i.LINK connectors.

What is Mbps?

Mega bits per second. A measure of the rate at which data is transmitted per second. In case of 100 Mbps, 100 Mega bits of data can be transmitted per second.

i.LINK operation with your camcorder

For details on operation when other equipment with i.LINK (HDV) connector is connected, see *page 141*.
For details on connection with i.LINK cable and necessary software, refer to the operating instructions supplied with the connected device.

About the required i.LINK cable

Use the Sony 6-pin-to-4-pin or 4-pin-to-4-pin i.LINK cable (for HDV dubbing) to connect the i.LINK devices.

i.LINK and are trademarks.

External Synchronization

When multiple units of the PMW-F3K/F3L are used in the same shooting location, recording can be made in synchronization with a specific reference signal, and the timecode can be matched among all the units.

Aligning the phase of the video signal (Genlock)

Genlock operation is enabled by supplying an SD or HD reference signal to the GENLOCK IN connector of the camcorder.
Valid reference signals depend on the video format selected.
When the video format is HQ 1920/23.98P or HQ 1440/23.98P, select either "59.94i (2-3 PullDown)" or "23.98P" with "23.98P Output" *(page 119)* of the VIDEO SET menu.

NTSC Area/NTSC(J) Area

Video format	Valid reference signal
HQ 1920/59.94i	1080/59.94i 480/59.94i
HQ 1920/29.97P	
HQ 1920/23.98P (23.98P Output: 59.94i(2-3 Pull Down))	
HQ 1920/23.98P (23.98P Output: 23.98PsF)	1080/23.98PsF 480/59.94i
HQ 1440/59.94i	1080/59.94i 480/59.94i
HQ 1440/29.97P	
HQ 1440/23.98P (23.98P Output: 59.94i(2-3 Pull Down))	
HQ 1440/23.98P (23.98P Output: 23.98PsF)	1080/23.98PsF 480/59.94i
SP 1440/59.94i	1080/59.94i 480/59.94i
SP 1440/23.98P	
HQ 1280/59.94P	1080/59.94i 720/59.94P 480/59.94i
HQ 1280/29.97P	
HQ 1280/23.98P	
DVCAM59.94i SQ/EC	1080/59.94i 480/59.94i
DVCAM29.97P SQ/EC	

PAL Area

Video format	Valid reference signal
HQ 1920/50i	1080/50i 576/50i
HQ 1920/25P	
HQ 1440/50i	
HQ 1440/25P	
SP 1440/50i	
HQ 1280/50P	1080/50i 720/50P 576/50i
HQ 1280/25P	
DVCAM50i SQ/EC	1080/50i 576/50i
DVCAM25P SQ/EC	

The phase adjustment for the reference signal can also be made with "Genlock" *(page 128)* of the OTHERS menu.

Notes

- If the reference signal is unstable, genlock is not possible.
- The subcarrier is not synchronized.

Synchronizing the timecode of your camcorder with that of another unit

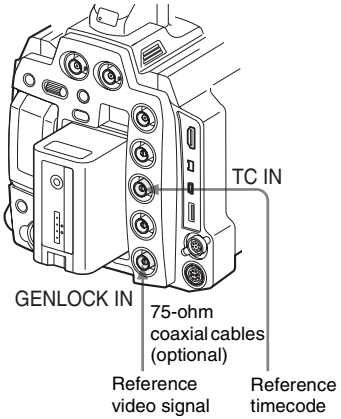
The timecode of your camcorder can be locked to that of another unit.
Set the unit that supplies the timecode to a mode in which the timecode output keeps advancing (Free Run or Clock mode).

1 Set "Timecode" of the TC/UB SET menu as follows:

Mode: Preset
Run: Free Run

2 Press the TC/U-BIT/DURATION button so that the timecode is displayed on the screen.

3 Supply an HD or SD reference video signal to the GENLOCK IN connector and the reference timecode to the TC IN connector.



Thus the built-in timecode generator of your camcorder locks to the reference timecode. The message “EXT-LK” is displayed on the screen.

After about 10 seconds, you can disconnect the external timecode without losing the synchronization.

Notes

- Check that the reference timecode and the reference video signal are in a phase relation that complies the SMPTE timecode standards.
- When you finish the above procedure, the timecode is immediately synchronized with the external timecode, and the time data indication will show the value of the external timecode. However, wait for a few seconds until the timecode generator stabilizes before recording.
- If the frequency of the reference video signal is not the same as the frame frequency of the camcorder, the camcorder cannot be correctly genlocked. In such a case, the timecode is not correctly synchronized with the external timecode.
- When the connection is removed, the timecode advance may shift one frame per hour with respect to the reference timecode.

To release the external timecode synchronization

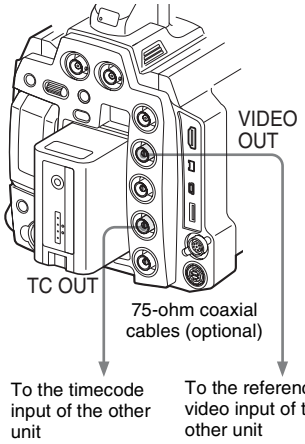
Change the “Timecode” setting of the TC/UB SET menu or turn off the camcorder.
External synchronization is also released when you start recording in a special recording mode (Slow & Quick Motion, Frame Rec, or Interval Rec).

Synchronizing the timecode of another unit with that of your camcorder

The timecode of another unit can be locked to that of your camcorder.

1 Specify the timecode of your camcorder with “Timecode” and “TC Format” *(see page 56)*.

2 Connect the TC OUT connector and VIDEO OUT connector with the timecode input and reference signal input of the other unit, respectively.



The timecode to be output from the TC OUT connector depends on the setting of “TC Out” on the TC/UB SET menu. If “TC Out” is set to “Generator,” the timecode generated by the timecode generator of the camcorder is output during recording and playback. If “TC Out” is set to “Auto,” the timecode generated by the timecode generator is output during recording, and that superimposed with the video signal is output during playback.

Important Notes on Operation

Use and Storage

Do not subject the unit to severe shock

- The internal mechanism may be damaged or the body warped.
- If an accessory mounted on the accessory shoe is subjected to severe shock, the accessory shoe may be damaged. In such a case, stop using it and contact your dealer or a Sony service representative.

Do not cover the unit while operating

Putting a cloth, for example, over the unit can cause excessive internal heat build-up.

After use

Always set the power switch to OFF.

Before storing the unit for a long period

Remove the battery pack.

Grip the handle when carrying

Grip the handle to carry. If you carry it by other parts, such as the viewfinder block or the LCD monitor block, the camcorder may drop, causing injury.

Do not leave the camcorder with the lenses facing the sun

Direct sunlight can enter through the lenses, be focused in the camcorder, and cause fire.

Shipping

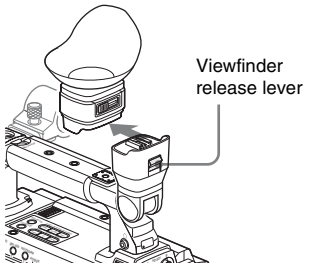
- Remove the memory cards before transporting the unit.
- If sending the unit by truck, ship, air or other transportation service, pack it in the shipping carton of the unit.

Care of the unit

Remove dust and dirt from the surfaces of the lens using a blower.

If the body of the unit is dirty, clean it with a soft, dry cloth. In extreme cases, use a cloth steeped in a little neutral detergent, then wipe dry. Do not use organic solvents such as alcohol or thinner, as these may cause discoloration or other damage to the finish of the unit.

To remove dust from inside the viewfinder remove the viewfinder by sliding it while holding the viewfinder release lever downward.



In the event of operating problems

If you should experience problems with the unit, contact your Sony dealer.

Note about the battery terminal

The battery terminal of this unit (the connector for battery packs and AC adaptors) is a consumable part.

Power may not be supplied to the unit properly if the pins of the battery terminal are bent or deformed by shock or vibrations, or if they become corroded due to prolonged outdoor use.

Periodic inspections are recommended to keep the unit working properly and to prolong its usable lifetime.

Contact a Sony service or sales representative for more information about inspections.

Use and storage locations

Store in a level, ventilated place. Avoid using or storing the unit in the following places:

- In excessive heat or cold (operating temperature range: 0ºC to 40ºC or 32ºF to 104ºF)
  Remember that in summer in warm climates the temperature inside a car with the windows closed can easily exceed 50ºC (122ºF).
- In damp or dusty locations
- Locations where the unit may be exposed to rain
- Locations subject to violent vibration
- Near strong magnetic fields
- Close to radio or TV transmitters producing strong electromagnetic fields.

• In direct sunlight or close to heaters for extended periods

To prevent electromagnetic interference from portable communications devices

The use of portable telephones and other communications devices near this unit can result in malfunctions and interference with audio and video signals.
It is recommended that the portable communications devices near this unit be powered off.

Note on laser beams

Laser beams may damage the CMOS image sensors. If you shoot a scene that includes a laser beam, be careful not to let the laser beam be directed into the lens of the camcorder.

About the LCD panels

The LCD panels are manufactured with extremely high-precision technology that yields effective pixel rates of 99.99% or higher. However, very rarely, one or more pixels may be permanently dark or permanently lit in white, red, blue, or green.
This phenomenon is not a malfunction. Such pixels have no effect on the recorded data, and the unit may be used with confidence even if they are present.

Phenomena specific to CMOS image sensors

The following phenomena that may appear in images are specific to CMOS (Complementary Metal Oxide Semiconductor) image sensors. They do not indicate malfunctions.

White flecks

Although the CMOS image sensors are produced with high-precision technologies, fine white flecks may be generated on the screen in rare cases, caused by cosmic rays, etc.
This is related to the principle of CMOS image sensors and is not a malfunction.

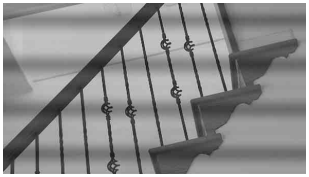
The white flecks especially tend to be seen in the following cases:
• when operating at a high environmental temperature
• when you have raised the master gain (sensitivity)
• when operating in Slow-Shutter mode

Aliasing

When fine patterns, stripes, or lines are shot, they may appear jagged or flicker.

Flicker

If recording is made under lighting produced by discharge tubes, such as fluorescent, sodium, or mercury-vapor lamps, the screen may flicker, colors may vary, or horizontal stripes may appear distorted.



In such cases, set the Flicker-Reduction function to Auto mode *(see page 55)*.
In some cases, such phenomena may not be improved with the Flicker-Reduction function. It is recommend to set the electronic shutter speed to $^{1}/_{100}$ sec. in 50-Hz areas and to $^{1}/_{60}$ in 60-Hz areas.

Focal plane

Owing to the characteristics of the pickup elements (CMOS sensors) for reading video signals, subjects that quickly move across the screen may appear slightly skewed.

Flash band

The luminance at the top and bottom of the screen may change when shooting a flashlight beam or a light source that quickly flashes.

Note on the viewfinder display

• Pictures on the LCD monitor and viewfinder screen may be distorted by the following operations:
  —Changing the video format
  —Rec Review
  —Starting playback from the Thumbnail screen
  —Reversing the LCD panel
  —Switching the Expanded Focus display
• When you change the eye direction in the viewfinder, you may see primary colors red, green, and blue, but this is not a defect of the camcorder. These primary colors are not recorded on any recording media.

Notes on data compatibility with other XDCAM EX-series products

- When you use other PMW-series products to play materials recorded on the PMW-F3K/F3L, any media in which clips of formats not supported by those products have been recorded cannot be used.
- The setting data *(page 134)* including picture profiles of the PMW-F3K/F3L cannot be used on other products.
- The setting data for other PMW-series products cannot be used on the PMW-F3K/F3L.

Fragmentation

If pictures cannot be recorded/reproduced properly, try formatting the recording medium. While repeating picture recording/playback with a certain recording medium for an extended period, files in the medium may be fragmented, disabling proper recording/storage. In such a case, make a backup of clips in the medium then perform formatting of the medium using "Format Media" *(page 133)* of the OTHERS menu.

Backup Battery

This camcorder uses a backup battery to retain various setting data.
A lithium battery (CR2032) for backup is mounted in the camcorder at the factory.
The backup battery retains the date, time, and timecode in Free Run mode even when no operating power is being supplied.

Service life of the backup battery

When the backup battery's voltage falls, the backup battery low-voltage warning appears on the LCD monitor/viewfinder screen.
If this warning appears, replace the battery as soon as possible.

WARNING

- Battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.
- Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.
When you dispose of the battery, you must obey the law in the relative area or country.

AVERTISSEMENT

- En cas de mauvaise manipulation de la batterie, risque d'explosion. Ne rechargez pas, ne démontez pas la batterie et ne la jetez pas dans le feu.
- Les batteries ne doivent pas être exposées à une chaleur excessive, notamment aux rayons directs du soleil, au feu, etc.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Lorsque vous mettez la batterie au rebut, vous devez respecter la législation en vigueur dans le pays ou la région où vous vous trouvez.

WARNUNG

- Akku kann bei falscher Handhabung explodieren. Akku deshalb nicht aufladen, nicht demontieren und nicht verbrennen.
- Akkus dürfen keiner starken Hitze z. B. durch Sonnenlicht, Feuer oder dergleichen ausgesetzt werden.

VORSICHT

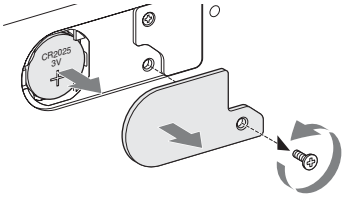
Explosionsgefahr bei Verwendung falscher Batterien. Batterien nur durch den vom Hersteller empfohlenen oder einen gleichwertigen Typ ersetzen.
Wenn Sie die Batterie entsorgen, müssen Sie die Gesetze der jeweiligen Region und des jeweiligen Landes befolgen.

Replacing the backup battery

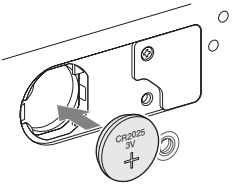
Notes

- Be sure to set the power switch to OFF when replacing the backup battery.
- Be careful not to drop the removed screw into the camcorder.

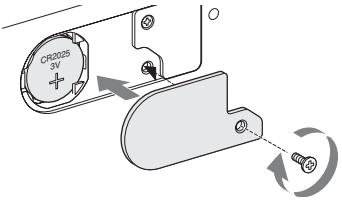
1 Open the cover of the backup battery holder on the bottom by loosening the screw, and remove the battery.



2 Insert a new backup battery (CR2032) with the + symbol on the battery facing outside.



3 Attach the cover in the original position.



Troubleshooting

Operating Power

Symptoms	Cause	Remedy
The camcorder does not power on when you set the power switch to ON.	No battery pack is mounted and no power is supplied to the DC IN connector.	Mount a battery pack *(page 24)* or connect an AC power using the AC-DN10 *(page 25)* .
	The battery pack is completely exhausted.	Replace the battery pack with a fully charged one *(page 24)*.
The power supply cuts while operating.	The battery pack becomes exhausted.	Replace the battery pack with a fully charged one *(page 24)*.
The battery pack becomes exhausted very quickly.	The ambient temperature is very low.	This owes to the battery characteristics and is not a defect.
	The battery pack is inadequately charged.	Recharge the battery pack *(page 24)*. If the battery pack is soon exhausted even after you charged it fully, it may comes to the end of its life. Replace it with a new one.

Recording/Playback

Symptoms	Cause	Remedy
Recording does not start when you press any recording start/stop button.	The power switch is set to OFF.	Set the power switch to ON.
	The SxS memory card is write-protected.	Release the write protection *(page 37)*, or replace the card with a non-protected SxS memory card.
	The SxS memory card is full.	Replace the card with one having sufficient space.
	The SxS memory card needs restoration.	Restore the memory card *(page 40)*.
Playback does not start when you press the PLAY button.	The power switch is set to OFF.	Set the power switch to ON.
The supplied IR Remote Commander does not work.	Remote control operation is disabled.	Enable remote control operation *(page 35)*.
	The battery of the IR Remote Commander is exhausted.	Replace the battery with a new one.
Audio recording is not possible.	The AUDIO LEVEL (CH-1/CH-2) controls are set to the minimum level.	Adjust the audio recording levels with the AUDIO LEVEL (CH-1/CH-2) controls *(page 59)*.
The recorded sound is distorted.	The audio level is too high.	Adjust the audio recording levels with the AUDIO LEVEL (CH-1/CH-2) controls *(page 59)*, and record again.
The recorded sound has a high noise level.	The audio level is too low.	Adjust the audio recording levels with the AUDIO LEVEL (CH-1/CH-2) controls *(page 59)*, and record again.

External Devices

Symptoms	Cause	Remedy
The equipment connected to the camcorder via an i.LINK connection does not react as expected, for example, no picture appears on its screen.	"Input Source Select" of the VIDEO SET menu is set to "Camera."	Set it to "i.LINK."
	It sometimes takes time for the connected equipment to recognize the operation.	Wait for about 15 seconds. If the connected equipment still does not react, do the following: • Check the i.LINK cable, for example, by re-plugging it. • Turn the power off, and connect the cable again. • Change the i.LINK cable.

Error/Warning Indications

The camcorder informs you of situations where warning, caution, or an operation check is required, through messages on the LCD monitor/ viewfinder screen, the tally lamps, and a buzzer.

The buzzer is output to the built-in speaker or to the headphones connected via the headphone connector. The buzzer volume can be adjusted with “Alarm Level” in “Audio Output” *(page 117)* of the AUDIO SET menu.

Error Indications

The camcorder stops all operations, including recording, if an error indication occurs (see below).

Error indication on LCD/viewfinder	Buzzer	Tally lamps	Cause and measures
E + Error code	Continuous	Rapidly flashing	The camcorder may be defective. Turn off the power and check that the connected devices, cables, and media are in proper condition. If the error persists when you reapply power, consult Sony service personnel. (If power cannot be turned off by setting the power switch to OFF, remove both the battery pack and the DC IN source.)

Warning Indications

When one of the following indications is generated, follow the message to clear the problem.

Warning indication on LCD/viewfinder	Buzzer	Tally lamps	Cause and measures
Media Near Full	Intermittent	Flashing	Free space on the SxS memory card has become insufficient. Replace it with another at the earliest opportunity.
Media Full	Continuous	Rapidly flashing	No space is left on the SxS memory card. Recording, clip copying and clip division cannot be performed. Replace it with another.
Battery Near End	Intermittent	Flashing	The battery power will be exhausted soon. Charge the battery pack at the earliest opportunity.
Battery End	Continuous	Rapidly flashing	The battery pack is exhausted. Recording cannot be performed. Connect a power source via the DC IN connector or stop operation to charge the battery pack.
Temperature High	Intermittent	Flashing	The internal temperature has risen above a safe operation limit. Suspend operation, turn off the power, and wait until the temperature falls.
Voltage Low	Intermittent	Flashing	The DC IN voltage has become low (stage 1). Check the power supply.
Insufficient Voltage	Continuous	Rapidly flashing	The DC IN voltage is too low (stage 2). Recording cannot be performed. Connect other power source.
Battery Error Please Change Battery.			An error was detected with the battery pack. Replace the battery pack with a normal one.

Warning indication on LCD/viewfinder	Buzzer	Tally lamps	Cause and measures
Backup Battery End Please Change.			The remaining power of the backup battery is insufficient. Replace the battery with a new one.
Unknown Media(A)[1)] Please Change.			A partitioned memory card or one that contains recorded clips exceeding the number permitted with this camcorder is loaded. This card cannot be used with this camcorder. Remove it and load a compatible card.
Reached Clip Number Limit Cannot Record on Media(A)[1)]			The maximum number of clips for a single memory card is reached. No more clip can be recorded on the card. Replace it with another card.
Media Error Media(A)[1)] Needs to be Restored			An error occurred with the memory card. The card requires restoration. Remove the card, load it again, and restore it.
Media Error Cannot Record to Media(A)[1)]			Recording cannot be done, as the memory card is defective. As playback may be possible, it is recommended to replace it with another card after copying the clips, as required.
Media Error Cannot Use Media(A)[1)]			Neither recording nor playback can be done, as the memory card is defective. It cannot be operated with this camcorder. Replace it with another card.
Cannot Use Media(A)[1)] Unsupported File System			A card of a different file system or an unformatted card was inserted. It cannot be used with this camcorder. Replace it with another card or format it with this camcorder.
Video Format Mismatch			The external signal input via the i.LINK connection cannot be recorded, as the video format setting is different from the signal format of the external input signal. Change “System” of the OTHERS menu to match it to that of the external signal.
Copy Protected Input Cannot Record			The external signal input via the i.LINK connection cannot be recorded, as the stream is copy-protected. Check the input signal.
DVCAM Input Signal! Cannot Record			The external signal input via the i.LINK connection cannot be recorded, as it is a DVCAM stream.
Media Error Playback Halted			An error occurred in reading data from the memory card, and playback cannot be continued. If this frequently occurs, change the memory card after copying the clips, as required.
Media(A)[1)] Error			Recording cannot be done, as an error occurred with the memory card. If this frequently occurs, change the memory card.
HDD A[2)] Battery Near End	Intermittent	Flashing	The battery power of the connected HDD will be exhausted soon. Change the battery at the earliest opportunity.
HDD A[2)] Battery End	Continuous	Rapidly flashing	The battery of the connected HDD is exhausted. Recording cannot be performed. Stop operation to change the battery.
Not Enough Capacity Change Media (A)[1)]			There is not enough capacity for copying. Replace the card with another one.
Reached Duplication Limit Change Media (A)[1)]			The card have already ten clips having the same name as that you tried to duplicate. Replace the card with another one.

Warning indication on LCD/viewfinder	Buzzer	Tally lamps	Cause and measures
Not Enough Capacity Cannot Divide			There is not enough capacity for dividing a clip.
Media Reached Rewriting Limit Change Media (A)[1)]			The memory card comes to the end of its service life. Make a backup copy and replace the card with another one as soon as possible. Recording/playback may not be performed properly if you continue to use the card. *For details, refer to the operating instructions of the memory card.*

1) (B) for the card in slot B
2) B for a HDD connected to slot B

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```

Specifications

General

Power requirements
DC 12 V (11.0 V to 17.0 V)

Power consumption
Approx. 18 W (Typical) (HD-SDI Dual-Link Off, VF On, LCD monitor Off)
Max. 24 W (Typical) (HD-SDI Dual-Link On, VF On, LCD monitor On)

Operating temperature
0ºC to +40ºC (32ºF to 104ºF)

Storage temperature
–20ºC to +60ºC (–4ºF to 140ºF)

Recording/playback formats

Video
HD HQ Mode: MPEG-2 MP@HL, 35 Mbps / VBR
1920 × 1080/59.94i, 50i, 29.97P, 25P, 23.98P
1440 × 1080/59.94P, 50P, 29.97P, 25P, 23.98P
1280 × 720/59.94P, 50P, 29.97P, 25P, 23.98P
HD SP Mode: MPEG-2 MP@H-14, 25 Mbps /CBR
1440 × 1080 /59.94i, 50i (23.98P is converted to 59.94i in 2-3 pull-down processing.)
SD Mode: DVCAM
720 × 480/59.94i, 29.97P
720 × 576/50i, 25P

Audio
LPCM (16 bits, 48 kHz, 2 channels)

Recording/playback time
With one SBP-16
SP or DVCAM mode: Approx. 70 min.
HQ mode: Approx. 50 min.
With one SBP-32 or SBS-32G1A
SP or DVCAM mode: Approx. 140 min.
HQ mode: Approx. 100 min.
With one SBS-64G1A
SP or DVCAM mode: Approx. 280 min.
HQ mode: Approx. 200 min.

Note

The actual recording/playback time may differ slightly from the values shown here, depending on usage conditions, memory characteristics, etc.

Continuous operation time (with BP-U60)
Approx. 130 minutes (HD-SDI Dual-Link On)
Approx. 170 minutes (HD-SDI Dual-Link Off)

Mass
Approx. 2.4 kg (5 lb 4.7 oz) (without accessories)

Dimensions (w/h/d)
Approx. 151 × 189 × 210 mm
($6 \times 7^1/_2 \times 8^3/_8$ inches)
(PMW-F3L, not including projecting parts)

Camera Block

Pickup device
Super-35mm-equivalent CMOS image sensor
Total pixels: Approx. 3.5M pixels
Size: 23.6 mm (H) × 13.3 mm (V), 27.1 mm (Diagonal)

Built-in ND filters
OFF: Clear
1: $^1/_8$ND
2: $^1/_{64}$ND

Sensitivity
T11 ISO800 (Typical, at 1080/59.94i)

ISO sensitivity
Equivalent to ISO400/27° (1080p, Video Gamma mode)
Equivalent to ISO800/30° (1080p, S-Log Gamma mode)

Video S/N
63 dB (Y) (Typical)

Gain
–3, 0, 3, 6, 9, 12, 18 dB, AGC

Shutter speed
$^{1}/_{32}$ to $^{1}/_{2000}$ sec.

Slow shutter
2 to 8 frames

Audio Block

Sampling frequency
48 kHz

Quantization
16 bits

Headroom
20 dB

Built-in speaker
Monaural
Output: 250 mW

Displays

LCD monitor

Screen size
8.8 cm diagonal (3.5-inch)

Aspect ratio
16:9

Picture size
640 (H) × 3 (RGB) × 480 (V) delta sequence

Transmission
Hybrid (semi-transmissive) type

Viewfinder

Screen size
1.148 cm diagonal (0.452-inch)

Aspect ratio
16:9

Picture elements
852 (H) × 480 (V)

Media Block

Card slots
Type: Express Card34
Number of slots: 2
Connector: Conforming to PCMCIA Express Card

Inputs/Outputs

Input connectors

AUDIO IN CH1/CH2 connectors
XLR 3-pin (2), female
LINE: +4 dBu
MIC: –20 dBu to –65 dBu (3-dB steps)
(Reference level: 0 dBu=0.775 Vrms)

GENLOCK IN connector
BNC type (1), 1.0 Vp-p, 75Ω, unbalanced

TC IN connector
BNC type (1), 0.5 V to 1.8 Vp-p, 10kΩ

DC IN connector
XLR 4-pin (1)

Output connectors

VIDEO OUT connector
BNC type (1), 1.0 Vp-p, 75Ω, HD-Y or analog composite signal

SDI OUT connector
BNC type (1)

HDMI OUT connector
Type A (1)

HD SDI A/B connectors
BNC type (2)

TC OUT connector
BNC type (1), 1.0 Vp-p, 75Ω

AUDIO OUT CH-1/CH-2 connectors
RCA phono jacks (2)
–10 dBu (47kΩ load, reference level)

Headphone connector
Stereo mini jack (1), –18 dBu (reference level output, 16Ω load)

Input/output connectors

i.LINK (HDV/DV) connector
i.LINK, IEEE1394, 4-pin connector (1), S400

REMOTE connector
8-pin round connector (1)

USB connector
Mini-B/USB2.0 Hi-Speed (1)

Option connector
USB Type A (1)

SPARE connector
10-pin round connector (1)

Lenses (Supplied with the PMW-F3K)

SCL-P35T20

Focal length
35 mm

Iris
Manual, T2.0 to C (close)

Focus
Manual, 0.35 mm to ∞

Filter diameter
95 mm

SCL-P50T20

Focal length
50 mm

Iris
Manual, T2.0 to C (close)

Focus
Manual, 0.5 mm to ∞

Filter diameter
95 mm

SCL-P85T20

Focal length
85 mm

Iris
Manual, T2.0 to C (close)

Focus
Manual, 0.85 mm to ∞

Filter diameter
95 mm

Design and specifications are subject to change without notice.

Supplied Accessories

Lens mount adapter (1)
It is mounted on the camcorder at the factory.
Microphone (1)
Wind screen (1)
It is attached on the microphone at the factory.
Infrared Remote Commander (1)
USB cable (1)
Shoulder belt (1)
Lithium battery (CR2032 for backup) (1)
It is mounted in the camcorder at the factory.
Lithium battery (CR2025 for the IR Remote Commander) (1)
It is mounted in the IR Remote Commander at the factory.
CD-ROM:
Utility Software for XDCAM (Dedicated application software, SxS Device Driver Software) (1)
Manuals for Solid-State Memory Camcorder (PDF Operating Instructions and Supplement) (1)
Operating Instructions (English version and Japanese version, 1 each)

With PMW-F3K only
SCL-P35T20 (focal length: 35mm) (1)
SCL-P50T20 (focal length: 50mm) (1)
SCL-P85T20 (focal length: 85mm) (1)

Optional Accessories

FZ Power Zoom Lens 14.0X: SCL-Z18X140
Battery pack: BP-U60
Battery charger: BC-U1, BC-U2
AC adaptor: AC-DN10, AC-DN2B
DC cable: CCDD-X2
SxS memory card:
SxS PRO series
SxS-1 series

SxS memory card USB reader/writer:
SBAC-US10
Mobile storage unit: PXU-MS240
Media adaptor:
MEAD-MS01 (for “Memory Stick PRO-HG Duo” HXA series)
MEAD-SD01 (for SDHC card)
Electret condenser microphone:
ECM-673, ECM-680S
Wireless microphone: UWP-V1
Professional hard disk unit: PHU-120R
Remote control unit: RM-B150, RM-B750
Wi-Fi adapter CBK-WA01

Notes

- Always make a test recording, and verify that it was recorded successfully.
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